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On Some Practical Points in the Use of Antacid Remedies in Dyspepsia and Gravel.

Gentlemen: It is not my intention to intervene at any length between you and the important discussion of hypnotics and analgesics which is to be initiated by my friend Dr. Leech. The late period of the year at which the section was organized has made it impossible for me to prepare a statement of the recent advances in our knowledge of the action of remedies and their application to the treatment of disease. Nothing can be more striking than the contrast between the activity of the present day in regard to these matters and the apathy and stagnation of forty years ago, when I first began the study of medicine. At that time the leading minds of the profession seem to have regarded with a sort of despair any hope of seriously influencing the issues of disease by the use of drugs. Some of them even gloried in a course of *laissez aller, laissez faire*, and turned their attention entirely to a study of the natural history of disease and the minutiæ of morbid anatomy. Now all this is changed. A more exact investigation of the fundamental action of drugs on the tissues and organs, and the discovery of the remarkable correspondence which has been found to exist between the chemical composition of substances and their physiological effects, have given a new and extraordinary impetus to therapeutical studies.

We are evidently entering on a period of important advances in the healing art, and the time seems not very far distant when therapeutics may at last fairly claim a position as one of the exact sciences. The application of chemical knowledge to the treatment of disease is both new and old. In the course of the discussion which is to be presently opened, we shall perhaps hear something of the new and more recondite applications of chemistry to therapeutics. What I am going to say, on the contrary, will only deal with old chemistry and old applications; but I hope, nevertheless, to gather on these ancient paths some useful gleanings of a practical character.

There are, perhaps, in the whole range of therapeutics no simpler problems presented to us than those which have reference to the palliative treatment of acid dyspepsia, and the chemical prophylaxis of uric acid gravel. An excess of acid in the stomach is almost as easily neutralized as if it were contained in a bottle in the laboratory. And hyperacidity of the urine is scarcely less under our control, provided we employ a larger dose of the neutralizing agent. But although the objects in view are so simple, and the means of attaining them so well known, there are a number of practical points in carrying out the indicated lines of treatment, which are neither simple nor well known; and it is to some of these points that I propose to call your attention. For our present purpose, alkalizing or antacid agents may be classed into those which are designed to take effect in the stomach, or gastric antacids, and those which are designed to take effect in the kidneys, or renal antacids. The gastric antacids in common use consist of the alkaline and earthy carbonates and lime water. Renal antacids include, in addition to these, the acetates and citrates of potash and soda, which are changed in the primæ viæ into carbonates of these bases.

Gastric antacids are employed in two distinct classes of cases—namely, in acid dyspepsia, and, secondly, in a variety of conditions characterized by great irritation of the stomach, often with vomiting, which we seek to allay by the administration of milk mixed with lime-water.

Antacids for Acid Dyspepsia.—You are all aware that sufferers from acid dyspepsia are in the habit of relieving their pains by the use of antacids. I have elsewhere pointed out that the most advantageous mode of administering antacids in these cases is in the guise of the lozenge. A lozenge, properly used, should be deliberately sucked, and not roughly chewed and swallowed. The process of sucking induces a plentiful flow of alkaline saliva, and the presence in the stomach of this bland demulcent secretion is soothing to the angry mucous membrane. The compilers of the "British Pharmacopeia" have provided us with two, and only two, antacid lozenges—namely, the troch. sod. bicarb. and the troch. bismuthi. The former contains 5 grains of bicarbonate of soda in each lozenge. It is an effective antacid, but it is not a favorable example of pharmaceutical art. It has a peculiarly nasty, soapy taste, which makes the sucking of it a penance; and this, I presume, is the reason why it has not become popular with dyspeptics. The bismuth lozenge is in every way a better article. It owes its antacid properties to 3½ grains of chalk and 2½ grains of carbonate of magnesia. These quantities are, in saturating power, equal to 10 grains of bicarbonate of soda. This is a full antacid dose, and the chalk and magnesia are practically tasteless, and this is a distinct advantage in regard to the active ingredients of a lozenge. The subnitrate of bismuth, to which this lozenge owes its name, has no antacid properties, and is probably inert. It imparts, however, a slight metallic taste, and communicates to the breath a somewhat disagreeable taint; so that its presence in the lozenge may, I think, be regarded rather as a tribute to the decaying art of polypharmacy than as a really useful addition. The bismuth lozenge has won its way into favor with dyspeptics by sheer merit, and inquiries which I have caused to be made among druggists and lozenge-makers show that the sale of this lozenge is steadily and largely increasing all over the country. A bismuth lozenge without the bismuth would be a nearly perfect antacid lozenge, and I would venture to suggest that some such lozenge should be introduced at the next revision of the "British Pharmacopeia."

Besides these officinal articles, there are largely sold in the shops a variety of lozenges and tablets for the use of dyspeptics. None that I have examined fulfil the conditions of a perfect antacid lozenge. The compressed tablets of carbonate of soda and the soda-mint tablets, although effective as antacids, are so unpalatable that they cannot be properly sucked without disgust, and, indeed, those who use them generally swallow them whole in haste—and thus miss the concurrent flow of saliva, which is distinctly helpful to dyspeptics. Some of the antacid lozenges sold in the shops are flavored with pungent spices to conceal the taste of the soda. All such adjuncts are obviously a mistake. Pungent spices have a strong tendency to provoke acidity in the stomach; and, moreover, any pronounced flavor is objectionable in an article which is used frequently. The alkaline salts of the Vichy springs have been made into very agreeable lozenges—which are sold in this country in sealed boxes. They owe their antacid properties chiefly to carbonate of soda, but partly also to carbonate of potash and to the carbonates of lime and magnesia. They contain besides a small quantity of sodium chloride, which pleasantly sharpens their flavor. These lozenges have a comparatively feeble saturating power, but owing to their full sapid qualities, they provoke an abundant flow of alkaline saliva, and this renders them effective for the relief of gastric acidity. Were it not for their costliness, I believe these Vichy lozenges would soon get into favor with dyspeptics.

As to the comparative merits of the several antacids employed in acid dyspepsia, there is, perhaps, on the whole not much to choose. Certain differences may, however, be noted. The alkaline bicarbonates have a nauseous taste, and if taken in excess they leave an alkaline residuum in the stomach. This is at least abnormal, and perhaps embarrassing, in an organ which requires the presence of an acid to perform its functions. The earthy carbonates, on the other hand, are tasteless, and, owing to their insolubility, they cannot, when taken in excess, cause the neutral line to be over-passed. Perhaps the most advantageous course would be to vary and change the antacid from time to time.

The question may now be put—Is there any harm in the practice of habitually using antacids for the relief of acid dyspepsia? Do dyspeptics purchase present ease at the cost of some future detriment? My attention has been directed to this point for some years. I have, naturally, regarded a practice so artificial with considerable misgivings. But the more extended my experience has become, the more I have been satisfied that, with due precautions, the practice is harmless—and I know of no valid evidence from any other quarter to justify a contrary conclusion. My own experience has been mostly gained from the use of the bismuth lozenges, which I have largely prescribed for a considerable length of time. I have, however, invariably enjoined the following strict rules in regard to their use: They were not to be used at or near meal time—not sooner than three-quarters of an hour or an hour after breakfast, nor sooner than an hour or an hour and a half after dinner; they were not to be used regularly and systematically, but only as the occasion arose, that is to say, when gastric pain was distinctly present, and was producing more discomfort than a man could be reasonably expected to bear who had the easy means of relief ready to his hands; lastly, the use of the lozenges was to be discontinued if their employment did not cut short the pain. This last injunction leads up to the remark that an antacid dose is sometimes a useful means of diagnosis in cases of gastralgia. It is often impossible to decide from a patient's statements what may be the real nature of the pains complained of. In such a case, if an effective antacid dose fail to give relief it is sure evidence that the pains are not due to gastric acidity.

Lime Water with Milk.—Lime water is used as an antacid in a very important and serious class of cases. It is a very general practice, as you know, when the stomach is intolerant of food, to administer milk with lime water—and often with the happiest results. But in many instances the symptoms are not allayed and the milk is vomited up in hard, sour curds. Failure in these cases is often solely due to the feeble antacid property of the lime water. The saturating power of lime water is really very low. Quicklime dissolves in water only to the extent of about half a grain to the fluid ounce—and this is only equivalent in saturating power to one grain of chalk and to a grain and a half of bicarbonate of soda. To reach an effective antacid dose lime water requires to be given in very large quantities—quantities which are altogether impracticable. Six ounces of lime water are only equal to a single ordinary antacid dose of chalk or bicarbonate of soda. I have repeatedly observed in cases of feeding with milk and lime water that failure was simply due to the feebleness of the antacid charge—and that when a solution of 5 to 10 grains per ounce of bicarbonate of soda was substituted for lime water as an admixture with milk a favorable result was at once obtained, and the vomiting of hard curds arrested.

A useful notion of the relative antacid potency of the several articles in common use as gastric antacids (as sold in the shops) may be obtained from an inspection of the following table. Ten grains of bicarbonate of soda are taken as a standard antacid dose; and the quantities given of the other articles correspond in saturating value to this standard dose. The results were obtained by direct alkalimetrical determinations, and are here shown in round numbers:

Table of Antacid Equivalents:

10 grains sod. bicarb. = 12 grains pot. bicarb.
“ “ = 6 “ creta precipit.
“ “ = 6 “ carb. magnesia.
“ “ = 3 “ light calcined magnesia.
“ “ = 6 fluid ounces lime water.
“ “ = 2 fluid drachms liq. potassæ.
“ “ = 1 bismuth lozenge B. P.
“ “ = 2½ Wyeth's soda-mint tablets.
“ “ = 5 Vichy lozenges.

The use of alkalizing agents for the prevention of uric acid gravel stands on quite as rational a basis as the use of antacids for the relief of acid dyspepsia. It is chemically impossible for uric acid to be deposited in the free state from an alkaline urine; and as we have the means of harmlessly alkalizing the urine at will, we have in our hands, theoretically at least, the absolute power of preventing uric acid gravel. There are, however, a good many practical difficulties in the way. The disposition to uric acid gravel has a certain persistence. It may last intermittently for weeks, months, and even years, and it would obviously be too great a strain on the treatment which is purely preventive to require that a patient should take antacid remedies in sufficient doses and at sufficiently frequent intervals to maintain the urine continuously alkaline for so long a period of time; nor is this necessary. A study of the normal oscillations of the urine at different periods of the day and night leads to the inference that the liability to uric acid gravel only assumes a morbid intensity during a limited portion of the twenty-four hours. The precipitation of uric acid in the kidneys can only take place when there is a concurrence of several favoring conditions. The flow of urine must be very slow, the secretion must be poor in saline constituents, it must be acid or even hyperacid in reaction, and it must be fairly rich in uric acid. Now these several conditions only coincide at one period of the twenty-four hours, namely, during the hours of sleep. The time of sleep is a time of fasting, and therefore a time of hyperacidity of the urine; a time of bodily immobility and recumbency, and therefore a time when the renal stream approaches nearest to absolute stagnation. On the other hand, during the day and the waking hours the recurrence of the meals keeps the urine rich in saline ingredients, and at a low degree of acidity, or even renders it for awhile actually alkaline; the renal stream is comparatively full and rapid, and its descent from the kidneys is favored by the force of gravity. During these hours, therefore, the risk of uric acid precipitation is reduced to a minimum, even in persons who show a distinct tendency that way; for, as I have repeatedly had occasion to observe, the urine of calculous subjects exhibits exactly the same cyclical diurnal variations as that of healthy persons, though not always to so pronounced a degree.

It follows from these considerations that if we safeguard the night the day may be generally left to take care of itself. This theoretical deduction is fully in accordance with experience in the treatment of uric acid gravel. In the milder cases a single full dose of the alkalizing agent taken at bed-time suffices to prevent the recurrence of the colicky pains and the discharge of uric acid concretions. For this purpose the citrates and acetates seem to be preferable to the bicarbonates. Their effect, I have reason to believe, is more protracted and covers a longer period of time than that of the bicarbonates. The citrate of potash is, on the whole, the best preparation to employ; it has very little taste, and it sits comfortably on the stomach. The dose for an adult should not be less than 40 to 60 grains, dissolved in three or four ounces of water. In severer cases a single dose is insufficient, and the early morning urine will still exhibit a morbid disposition to precipitate uric acid. In such cases a second dose should be taken about the middle period of the hours of sleep. This is less difficult to manage with the subjects of gravel than in healthy persons. There is commonly in calculous subjects a certain restlessness, and a certain irritability of the urinary organs, which leads to an increased frequency of micturition, and such persons barely pass the night without a call to empty the bladder. Advantage should, therefore, be taken of this break in the continuity of sleep to take the second antacid dose. In this way the entire night and early morning may be effectually guarded.

Cases of uric acid gravel, however, are not always to be got rid of on these easy terms. Now and then instances are met with in which the perversion is so great that the urine is disposed to deposit almost all the twenty-four hours round, and in which the normal alkaline tide, after meals, seems to be altogether abrogated. Under these circumstances additional doses of the antacid are required to afford the requisite protection. But, so far as I have seen, these extreme conditions only last a short time—a few days at most—and there is then a return to a less urgent state of things. It is indeed a marked character of uric acid gravel that it oscillates in intensity—it comes and goes in paroxysms—reminding one of the waviness of gouty phenomena. For this reason it is desirable to frequently note the state of the urine, and to ascertain its greater or less proneness to deposit uric acid, so that the administration of the antacid may be adjusted to the actual needs of the patient. There is no great difficulty about this. If a freshly voided specimen of the urine of fasting—say the urine of the early morning, or the urine secreted just before dinner—be set aside in a bottle in a warm place, so as to prevent the separation of the amorphous urates, the imminence of precipitation can be easily observed. If precipitation be morbidly imminent crystals of uric acid will appear—perhaps at once, perhaps in an hour or in a couple of hours. If precipitation be not morbidly imminent crystals will not appear for several hours—perhaps not for two or three days. It is possible in this way to gauge pretty accurately the intensity of the morbid tendency, and to regulate thereby the amount and frequency of the antacid dose, or to decide on its discontinuance.

The essential thing in the prophylactic treatment of uric acid gravel is to guard the urine from precipitating within the precincts of the kidney. And we shall practically have attained our object if we succeed not in altogether preventing precipitation, but in postponing it until the urine has quitted the kidneys. A postponement for a short time—even half an hour—may make all the difference between a precipitation which is fraught with pain and peril and a precipitation which is practically harmless. Now, the protective effect of the antacid extends in this respect a good deal beyond the point at which the urine is rendered actually alkaline. For although all acid urines of medium density precipitate uric acid sooner or later, the time of the occurrence of that precipitation is immensely influenced by the degree of acidity of the urine. Other things being equal, the more acid the urine the earlier is the precipitation, and the less acid the urine the longer is the precipitation postponed. An antacid effect, therefore, which is too feeble to render the urine actually alkaline may be quite sufficient to depress its acidity to such a degree as shall postpone the time of precipitation until the urine has escaped from the kidneys, and even from the bladder.

There are several important matters in connection with the preventive treatment of uric acid gravel which I am unable to touch upon, such as the regulation of the time and quality of the meals and the general mode of life, the use of other salines besides those which tend to diminish the acidity of the urine, the relations of uric acid to oxalate of lime and so forth. To expand the subject in these directions would lead me too far. I could not pursue it without entering on some very intricate questions of urinary chemistry—the elucidation of which would require more time than I have now at my disposal—and some of which, moreover, are not yet ripe for profitable discussion. The conditions which determine the occurrence of urinary gravel are still imperfectly understood, and several of the problems connected therewith still await scientific study. The subject is one of great interest, both in regard to its therapeutical issues and its physiological bearings, and I know of none more likely to yield valuable results to a skilled and earnest inquirer.

A CLINICAL LECTURE.

Delivered at the City and County Hospital, San Francisco.

By Albert Abrams, M. D.

The Treatment of Tabes and Other Nervous Diseases by Suspension.

[Reported by R. E. Hartley.]

Gentlemen: You will remember that when the medical press of France first made us acquainted with a new method of treatment for tabes dorsalis, it was at once begun among our tabetics in the hospital. At that time I told you that I would at a future date report the results obtained by the suspension treatment. I believe that a sufficient interval of time has elapsed to enable us with the experience of others, aided by our own observations, to speak more definitely about this method. It is true that clinicians have not all achieved the brilliant results hoped for. The furor attending any new discovery in medicine is justifiable. Unless it is heralded with eclat it receives no consideration. The introduction of the suspension treatment is no exception and when only a few of the brilliant results are achieved, the new discovery is a "success." Suspension as a method of treatment in tabes was an accidental discovery made by Motchoukowsky, a Russian physician, who observed in a tabetic patient suspended by Sayre's apparatus for the treatment of scoliosis, a marked amelioration of the lancinating pains, and other symptoms peculiar to this disease. Dr. Raymond, who was on a mission to Russia, acquainted himself with this method and on his return to Paris conveyed the idea to Charcot, who has since this time extensively practised the suspension treatment. In one of Charcot's early publications the results attained in the treatment of tabes were manifested in the disappearance of the lancinating pains, improvement in coördination and a return of the sexual power. Other writers have since then confirmed these observations.

We have used continuous suspension in five tabetics. In one case, which you may remember, a man who had well developed tabetic symptoms with trophic articular changes, amelioration was first noted by the patient, with reference to his sexual power. For more than fifteen years, he was deprived of all sexual feeling. Even after the first suspension, erections occurred; and, what is more worthy of note, the erections were accompanied by desire. In one patient whom I suspended for the cure of a chronic sciatica, I had to employ anaphrodisiacs in order to subdue the incessant erections. Another patient in the third stage of tabes had had no erections for five years. He declared after the suspensions "that he had a new lease on life." He had, since the commencement of the treatment, almost nightly seminal emissions. You know that in the lumbar region of the spinal cord there is a centre that governs the acts of erection and seminal ejaculation and it is this centre that is undoubtedly influenced by the mechanical act of suspension. I have resorted to suspension in two cases of psychical impotency with good effect. In Paris at one time, a brief "hanging" was a treatment resorted to for impotency. The *post-mortem* examination of criminals, who have suffered death by hanging, often shows the occurrence of seminal emissions. The improvement noted in the functions of urination is probably likewise due to the influence on the vesical centre of the spinal cord.

How are we to explain the undoubted improvement in these cases? Motchoukowsky made certain experiments to determine the mode of action of the treatment, and found that on suspending a cadaver, a lengthening of the body was noted to the extent of six cm., and a lengthening of the spine, between the second cervical and fourth lumbar vertebra, of 2¼ cm. He also noted in suspending living persons, increased arterial tension and increased rapidity of pulse and respiration, and is inclined to explain the improvement in his cases to the greater activity of the circulation induced during suspension. The increase in the number of pulse beats and respirations can be noted in the patient whom we will now suspend. Thus we see that the immediate effect of suspension is stimulation, and the greater freedom of movement observed in ataxic cases, immediately following suspension is the result of stimulation. One of my patients with lateral sclerosis invariably resorts to suspension, whenever he feels depressed and the stimulating effects following seem to justify the procedure. Althaus, of London, explains the relief obtained in all these cases to a breaking up of adhesions, the result of meningitis. This is the reason, he observes, that improvement is more pronounced in chronic than in acute cases. I believe that the benefit is due to irritation consequent upon the tension of fibres in the spinal cord which have escaped degeneration, or the irritation of fibres which have, only undergone incomplete degeneration. The method of suspension is simple. All that is necessary is a Sayre apparatus. We practice suspensions not oftener than three times a week—the time of suspension ranging from one-half to five minutes, although in special cases a greater duration may be employed. If we explain the action of the treatment by the pull exerted on the spinal cord, then more positive effects are obtained by dispensing with the axillary supports. If this prove too severe for the patient, then, raising the arms during the operation, will increase the tension on the spinal cord. It is of great importance to have the axillary supports well padded, for it has occurred in one or two instances, that ischemic paralysis of the arm followed.

In the employment of the suspension treatment, we must judiciously select our cases. Many contra-indications exist. Three deaths have been reported following its use. In two of the fatal cases suspension was practised in the absence of the physician, and resulted in the slipping of the chin support over the mouth, the patients dying from suffocation. Certain accidents will occur after suspension, which cannot be foreseen. Thus, Bernhardt reports, that during the suspension of a tabetic, the patient lost consciousness and convulsions occurred, and Dr. Bruns reports a similar case. We know that suspension increases the frequency of respiration, and diminishes the amplitude of inspiration and expiration, hence we should employ this treatment with care in all chronic affections of the respiratory apparatus. Again, in diseases of the circulatory system, we should be extremely careful, knowing that suspension increases the frequency of the pulse, and the blood pressure. In the aged, in whom atheroma exists, the danger of rupturing an artery should always be borne in mind.

Success having attended the suspension treatment in tabes, neuropathologists began to employ it in other diseases of the nervous system, and apparently with success. Aside from the cases already reported, I have employed it in four cases of lateral sclerosis, two cases of chronic sciatica, two cases of paralysis agitans, one case of disseminated sclerosis and in one case of Potts' paralysis. In order to scientifically test the value of any mode of treatment, it should be employed to the exclusion of all others. In one case of chronic sciatica, after futile recourse to other methods of treatment, recovery followed, traction being made on the affected side, while the patient was suspended. In the other case the patient was made worse. In the case of lateral sclerosis all the patients were benefited, the improvement manifesting itself in better locomotion. What was especially characteristic in these cases, was the fact that improvement continued only up to a certain point, and then ceased, though retrogression was not observed in any of the cases. In one case of lateral sclerosis, violent twitchings of the extremities followed each suspension. In one case of paralysis agitans marked improvement followed the tenth suspension; not only was the muscular tremor lessened, but the gait and the facial expression showed material improvement. This patient is using the suspension treatment at his home, under the guidance of an intelligent wife. In the other case of paralysis agitans, existing for over ten years, after eight suspensions no improvement has been noted by the patient. In one case of disseminated sclerosis, with paresis of the right lower extremity, decided improvement has shown itself in the muscular tremor, but not in the gait. Finally, in the case of Pott's paralysis, the gait of the patient was decidedly improved, and the angular curvature was diminished.

S. Weir Mitchell has recently directed attention to the employment of suspension in Pott's disease. He maintains that no case ought to be considered desperate without its trial, and that it has succeeded after failure of other accepted methods. Dr. T. W. Huntington, surgeon to the Southern Pacific Company's Hospital, at Sacramento, has informed me of a very interesting case of sub-luxation of the lumbar vertebræ. It was that of a carpenter who sustained an injury in the lumbar region, followed by paralysis of the lower extremities and loss of power over the rectum; sensation in both extremities was also lost. Suspension was begun, and after the second operation sensation had almost entirely returned to the extremities. After the fourth suspension the patient walked the entire length of the ward on crutches. At the sixth week from commencment of treatment sexual power was regained, and at the tenth week the patient was discharged. Cases with such results are encouraging. The introduction of suspension in the treatment of nervous diseases marks one of the most important events in therapeutical progress. We have abundant evidence that it is palliative, and time alone will decide its value as a curative measure.

A CASE OF LORETA'S OPERATION FOR STRICTURE OF THE PYLORUS.

By T. W. Huntington, B. A., M. D., Surgeon Southern Pacific Co's Hospital, Sacramento, Cal.

Read before the Sacramento Society for Medical Improvement.

Until recently no attention has been paid to the after-effects of chronic gastric or duodenal ulcer upon the anatomical structure of the pylorus. That stenosis of the pyloric orifice is occasionally an important sequel of such disease is now undisputed, while the operation devised by Loreta for the relief of this condition seems to be a rational and comparatively safe procedure. It is certain that the operation will prove a boon in a rather numerous class of obscure, tedious and urgent cases, which present a history of prolonged gastric derangement, and in which medication and dietetics have proven unavailing. The following case will be of interest as a contribution to the literature of this subject:

T. W——, æt. 23, native of Ireland, by occupation a laborer, entered the Southern Pacific Co's Hospital Jan. 16, 1889. The following history of the case was obtained: Four years ago, while in Ireland, patient had a prolonged attack of gastric trouble, accompanied by epigastric pain, vomiting, and loss of appetite. A similar attack occurred one year later, and he had never fully recovered. In July, 1888, vomiting recurred, accompanied by constant belching of gas from the stomach, great pain in the epigastrium; absolute disgust for food, loss of weight, and general debility. About this time he applied for treatment at the Hospital as an office patient, and continued in this capacity until Jan. 16, 1889, without relief. The diagnosis made was chronic gastric ulcer. Upon admission to Hospital, he was placed upon a strict diet, consisting of peptonized milk and raw minced meat. There was almost immediate improvement in the patient's condition.

On March 23, 1889, however, the gastric symptoms were so distressing, that it was determined to irrigate the stomach daily through a stomach tube. For this purpose a solution of bicarbonate of soda, two drachms to the pint, was used at first, and later on a solution of boracic acid, one drachm to the pint. Although improvement followed upon this treatment, yet, at the end of two weeks, he still complained of accumulation of gas in the stomach, and of deep epigastric pains, from which he had never been relieved. Rigid diet was adhered to, and at times the patient was nourished by rectal alimentation alone. While occasionally there was relief from vomiting, this symptom never failed to recur. On June 1st, it was discovered that the stomach was greatly dilated, and failure of his general condition was unmistakable. On the 7th of June he went to San Francisco, on an indefinite leave of absence, but his former symptoms were so aggravated that he returned in one week. From this time vomiting was almost constant, whether the stomach contained ingesta or not; he frequently vomited coffee ground material. Having determined that the patient's trouble was now due to cicatricial contraction of the pylorus, and his consent having been obtained, I decided to operate by Loreta's method. For several days previous to the operation, the patient was prepared by daily irrigation of the stomach and rectal alimentation.

On the 18th of June, assisted by Doctors Cluness, Gardner, and Simmons, with a number of other physicians, the patient was etherized and I opened the abdominal cavity by an incision four inches in length, extending from the sternum to the umbilicus. No important hemorrhage was encountered in opening the omentum, and the anterior wall of a greatly dilated stomach was easily exposed. The pyloric orifice could not be definitely located, although the conditions seemed to be such as to warrant completion of the operation. A vertical incision, one-half inch in length, was made through the anterior wall at a point midway between the two curvatures and three inches from the pylorus. No important vessels were severed. Through this opening a search for the pyloric orifice was instituted, and the opening detected with some difficulty; it was located on the upper curvature, the duodenum being turned backward and covered by a pouch or *cul-de-sac*, formed by the dilated end of the stomach. The point of the little finger engaged in the pylorus with much difficulty. A small uterine dilator was then introduced and the opening slightly enlarged; further dilatation was effected by means of Bigelow's powerful sinus dilator. The incision in the gastric wall was then enlarged to admit the index fingers of both hands, by means of which the operation was completed. The dilatation was carried to a degree sufficient to admit three fingers readily. The stomach wound was closed by continuous silk suture of the muscular and mucous coats, and by Lembert's interrupted silk suture of the peritoneal coat. The abdominal wound was carefully cleansed with sublimate solution and closed with silver sutures. Time of operation 1½ hours.

The patient suffered but slightly from shock and vomited once, two hours after. The vomitus consisted of blood and biliary matter. His temperature for the following week ranged between normal and 100° F. For the first ten days no food was given by the mouth, patient's strength being maintained by nutrient enemata, consisting of liquid peptonoids, whiskey and peptonized milk. Small pieces of ice were permitted from the first, and were rendered imperative by annoying thirst.

During the night of June 26th, patient vomited twice, owing to indiscretion in the use of ice. The following morning it was discovered that one of the sutures at the middle of the abdominal incision was broken, and that the wound had opened. Through this orifice a fan-shaped portion of omentum protruded. This was at once carefully cleansed and replaced, the wound being reclosed by a strong suture. After the second week the patient was nourished wholly by the stomach, solid food being gradually substituted for liquids. There was no further interruption to recovery.

July 20th, two months after operation, patient has an excellent appetite; eats liberally of solid food, without vomiting or distress. He has gained rapidly in weight and strength, and hopes to resume work at an early day.

Positiveness in the diagnosis of cicatricial, or non-malignant stenosis of the pylorus is far from easy of attainment. There are, however, three factors, which, if present simultaneously, point strongly to the existence of this condition—First: a well-authenticated history of chronic gastric or duodenal ulcer. Second: persistent vomiting of partly digested food, or of biliary fluid. Third: marked dilatation of the stomach. Epigastric pain, disgust for food of any sort, and chronic constipation, together with various phenomena depending upon functional derangement, are of value only as confirmatory symptoms.

According to Treves, of London, this operation has been done frequently on the continent of Europe, Loreta being the most prominent operator. Up to May, 1889, this method had been resorted to but once in England, and that case was treated by Treves himself. Drs. Kinnicut and Bull, of New York, have recently published a table of twenty cases by various operators. To this table I have added Treves' case and my own, making twenty-two in all. Of these, fourteen are reported cured, one improved, and seven dead. The causes of death in the fatal cases are as follows: Cancer of the stomach, hemorrhage into the stomach after operation, renal disease, exhaustion (on the eighteenth day), tetanus, and collapse. In one case the cause of death is not given.

Loreta states that in uncomplicated cases he has met with almost universal success. It is to be regretted that his statistics are inaccessible, he having lost the notes of many of his cases.

In the preparation of this class of cases for operation, much can be done to insure a fortunate result; and in this connection I wish to give due credit to the efforts of my assistant, Dr. George B. Somers. To him was entrusted almost the entire responsibility of treatment, both by irrigation and dietary measures, and to his efficient management I believe our success was largely attributable. The patient's condition at time of operation was excellent, his strength having been conserved by skillful feeding.

426½ J street.

FRACTURE OF THREE CERVICAL VERTEBRÆ.—FATAL TERMINATION ON THE THIRTY-SIXTH DAY.

By DAVID WOOSTER, M. D., San Francisco, Cal.

WITH A

REPORT OF THE MICROSCOPICAL EXAMINATION OF THE CORD.

By D. W. MONTGOMERY, M. D., Professor of Pathology, University of California, San Francisco.

On the 22d of May, 1889, while going along a sidewalk, Mr. James B. Hill, a house-mover by occupation, was struck on the top of the head by a bale of hay, which some one rolled out from a loft-door, ten or twelve feet above the sidewalk. He felt a "grinding, crushing" sensation, and "knew that his neck was broken, as he fell helpless to the sidewalk." I saw him at his house three hours after the injury. He was lying on a lounge, with his head in the position it assumes when one tries how far he can draw the head down between the shoulders. His neck was not immovable, as in simple dislocation.

Examination was made, by the touch, through the mouth, of the anterior surface of the cervical vertebræ, and there was no doubt of anterior displacement of a vertebra, though which one was not made out. Extension while a finger was held against the displaced bone, did not restore it to the level of the remaining vertebræ. As the neck was freely movable, and as the patient could move it from side to side—as in saying "no" by shaking the head, and as he could nod "yes" and swallow and talk, any continued manipulation for restoration of the true line of the anterior plane of the vertebræ was not thought advisable. The head and neck were fixed by suitable apparatus in anatomical position. A consultation being held with several eminent physicians, it was determined, without dissent, to make an incision along the raphe of the neck and uncover the seat of injury, with a view to removing any fragments that might be found pressing on the cord, with the hope of restoring sensation and motion below the level of the injury, which (except flexure of the forearms, and sensation in the pulp of the indices and thumbs, and above a horizontal line drawn along the centre of the sternal end of the first ribs) was entirely absent.

The operation consisted in making a simple incision, along the raphe down to the vertebræ, and removing with forceps and fingers six small fragments of arches, processes and vertebræ, and satisfying ourselves that the cord was not compressed. Of course no search was made for rupture or laceration of the cord, but as no improvement in sensation followed the removal of the fragments, serious lesion of that structure was undoubted. The incision of the neck was left open, excepting three stitches at its upper end, and was dressed with antiseptic gauze. On account of the posterior aspect of the injury and incision, the drainage was always complete, and spinal fluid escaped in large quantities for the first ten days. The patient said he felt comfortable and in no pain when he awoke from the chloroform. The pulse, which was 45 before the operation, rose to 65 immediately after; below which it did not again fall. The operation was performed on the 23d, at 11 A. M. At 9 P. M. same day the pulse was 80; respiration, 36; temperature, 102. The face was suffused, the eyes red; there was some wandering in partial sleep, but when fully awake his mind was clear and sensation complete over the limited extent in communication with the brain.

His general and uniform condition after the operation was about as follows: He had sensation and motion only as mentioned above. He had no sensation or motion in any other part of his body or limbs. About twenty-four hours after the injury a gangrenous spot the size of a large hand, with a well-defined line of demarcation, appeared on the sacrum, went on to mummification, and finally, at the time of death, was being exfoliated quite down to the bone. Dry gangrenous plaques also appeared over the outer malleoli and over the insertion of the tendo achillis. There never was from the moment of injury to the end any convulsion, either clonic or tonic. Before death it became difficult for one to completely extend the fingers, which from the first were flexed to the normal extent, as when one's hand hangs loosely by the side. He never lost consciousness for a moment, except in sleep. The sphincters never relaxed except when unconsciously required for the evacuation of the alimentary canal, or the insertion of a catheter to empty the bladder. When these acts were accomplished the sphincters immediately returned to their normal state of contraction and remained so until the next unconscious demand. Emptying the bladder was attended by no expulsive effort whatever, but required suprapubic pressure for its completion. The bowels were evacuated by peristalsis and gravity only, having no aid from the abdominal muscles or massage. He could raise his arms from the shoulder in a state of abduction of the humerus with the forearm flexed at or within a right-angle, but he could not touch his face with either hand, nor could he adduct the humerus to the side or extend the forearm in the least degree. The flexors of the forearms, antagonized only by gravitation, kept them in constant motion, backward and forward. This movement of the arms was partly automatic but not unconscious, as he often asked to have them laid down. They could be replaced in extension without the least effort, there being no semblance of spasm of the flexors. During the whole five weeks he never could flex or extend the hand or any finger or the wrists. He always had tactile sensation in the index fingers. He retained sensibility to the prick of a pin in the pulp of the index fingers, and everywhere above the middle of the first rib. He could not at any time touch his thumbs with the index fingers nor make any effort to do so. Sensation could never be developed more than three inches down the shoulders, neither to touch or hurt, notwithstanding he could move his arms.

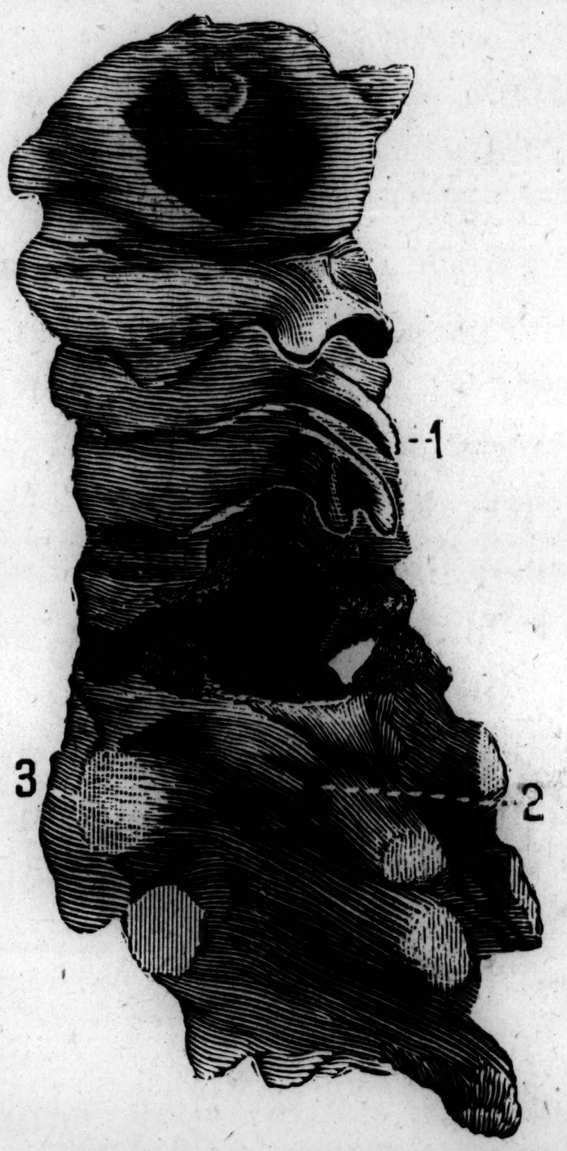
The fifth, sixth, seventh and eighth cervical nerves go to constitute the brachial plexus, but none of these communicate with the brain, except the fifth cervical. The plexus also has branches from the inferior cervical ganglia of the sympathetic, and by means of a branch from the fourth to the fifth cervical, it communicates with the cervical plexus. It was by this incomplete nerve supply that motion of the arms and sensation in the upper part of the arm was kept up. The sensation in the scapulæ was maintained by the pneumogastric portion of the spinal accessory, and the raising of the arm was aided by the motor portion of that nerve which arises principally above the seat of the injury to the medulla spinalis, in this case.

His articulation was generally distinct up to the last week, after which at times it became a little difficult to understand him. During this period he seldom spoke above a whisper. His deglutition was fairly good to the last. He could chew his food, but much effort at mastication he said "hurt his neck." Nothing was denied him in food or drink, and during the long vigil he ate and drank a little of everything. Nothing disagreed with him except when taken in excess, and even then, if it was food, he was promptly relieved by two or three drops of hydrochloric acid in a wine glass of water.

There were alvine evacuations daily, once or twice—of course unconscious. The renal secretion showed neither sugar nor albumin, by repeated tests. Fully three pints daily were drawn off, always normal in appearance. At the suggestion of Dr. Alfred Perry, the catheter used was always well cleansed, before and after using, in a 1:2000 bichloride solution. Perhaps to this was due the constant absence of ammoniacal odor in the urine, and also of urethral or vesical irritation. Priapism, in a mild degree, continued from first to last, never attaining rigidity, The scrotum sometimes "crawled" a little on introducing the catheter. His whole body was always warm; the hands and feet were never cold. Twice he had a chill from too long exposure of the back during the dressing; but this was not followed by a rise of temperature.

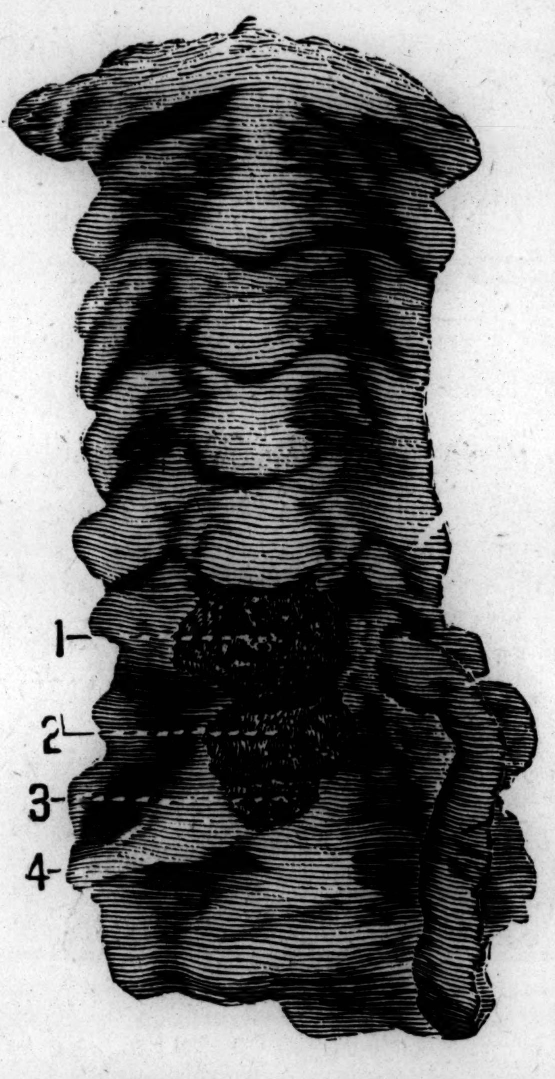
The incision became firmly united, except for about an inch directly over the injury. In the centre of this nearly filled ununited part was a fistulous opening, leading down to the cord on the body of the sixth vertebra. On the 26th of June at 11 A. M. he dropped into a deeper sleep than usual, from which he never awoke. At 12:38 P. M. his respiration stopped. The next minute there were eight beats of the abdominal aorta, on which my fingers were placed, at irregular intervals and with unequal impulse. The next and last minute there were four pulsations, the last one occurring in the last eighth of the minute. After this there was neither respiration nor movement of the heart. No death agony or recurring inspiration after a long interval.

Autopsy—twenty-four hours after death: The subject was that of a muscular man without any appearance of emaciation. Evidently assimilation had been good during the whole five weeks. The neck was still full and compact. An incision in the line of the one during life, and of the same length, was made. Two other incisions were carried at right-angles to this—one at the base of the occiput and the other along the shoulders. The flaps being turned back, the seven cervical and two upper dorsal vertebræ were exposed. The second dorsal was separated from the third, and the upper portion of the spinal column, thus isolated, was then carefully dissected out. No other parts were examined. The atlas, axis, third and fourth vertebræ were found apparently uninjured. The arches and transverse processes of the fifth and sixth were found separated from their bodies, fractured and finely comminuted. Fine fragments, too numerous to count, were crushed into the muscular fasiculi (multi fidus spinæ) lying in the left groove of the cervical column at this place. Under the arches of the fifth and sixth vertebræ, and to the left, where the left fifth and sixth transverse processes should be, the cord was crushed, its membranes lacerated in all directions, and the substance of the cord almost completely absent for half an inch or more. There were still a few small separated masses of white and gray substance adherent to the anterior and right lateral remnant of the sheath of the cord at the crushed spot. The muscular fasiculi nearest the cord on the left had become agglutinated, by inflammation, to the outer shreds of the cord, as if nature had been trying to reconstruct a covering for the mutilated substance. This physiological attempt is well shown in the wet specimen. The arch and articular facets of the seventh cervical and its spinous process were unbroken. The body was crushed and broken through its whole thickness, beginning at the anterior articular edge where it comes in contact with the first dorsal, and extending upwards and backwards entirely through, so that when the remaining united cervical vertebræ are placed against the remaining por-



Posterior View—Showing destruction of processes and laminæ of fifth and sixth cervical vertebræ, exposing spinal canal. 1. Right (and only) cornu of spinous process, third cervical vertebra. 2. Processes and arch of seventh cervical vertebra intact. 3. First dorsal, showing articular surface with first rib.

tion of the seventh, still in contact with the first dorsal, the cervical portion of the column is found to be shortened anteriorly the full vertical thickness of the seventh vertebral body. The lining of the cervical canal and the outer surface of the theca above the fifth to the atlas were red, but there was no pus or lymph shreds or plaques visible within the canal. On pressing the cord gently with the tip of the finger at the section on a level with the upper surface of the atlas, greenish-white pus issued in small quantity from the lacerated portion below the lower margin of the arch of the fourth. There was a small dark purple clot between the left transverse process of the axis and atlas. The left cornu of the spinous process of the third cervical vertebra was absent. The ligamentum subflava was torn entirely off the seventh arch. I submitted the piece to Dr. Douglass Montgomery for microscopical examination of the cord as to its lesions and pathological condition.



Anterior View.—1. Eroded surface of body of sixth cervical vertebra. 2. Remains of body of seventh cervical vertebra. 3. Fracture on superior portion of first dorsal body, evidently produced by compression, an irregular portion of bone being forced out. 4. Portion of first rib—fasiculus of multi fidus spinæ to the left of spinal column.

It is not pretended there is anything unique in this case. Neither J. L. Petit nor Boyer speak of vertebral fractures of bodies of vertebræ in their voluminous surgical writings. Boyer maintained all his life that the vertebral bodies could not be fractured. The fracture of one or more bodies of vertebræ by a blow on the head is so rare as to be phenomenal; but their fracture by direct violence to the spinal column or by falling head foremost is not uncommon. "Fracture of the neck bones," says Sir Astley Cooper, "above the third cervical are almost immediately fatal; but below this, life may go on some time. The reason of this," he continues, "is because the origin of the phrenic nerve not being injured, respiration is carried on by the diaphragm. A little branch of the second cervical aids in the formation of the phrenic, but this branch alone is unable to sustain respiration in case of fracture of the third vertebra; nevertheless, I knew one case to survive ten months after an accident of this kind." There is no mention of an autopsy. Sir Astley does not say whether the medulla was contused, but he does say there was no displacement of the fractured bones. In the case of a young woman who fell from a window, striking on her head, "many cervical vertebræ" were fractured. She lived two months. There was never complete paralysis. The medulla was atrophied, but not crushed. The theca was not lacerated. There was no displacement of fragments.[1]

Sir Astley says in case of fracture of the cervical vertebræ, with displacement, death occurs in from three to seven days, according as the injury implicates the fifth, sixth or seventh vertebra. [In our case precisely all of these three were fractured and more or less displaced, and yet the patient survived thirty-six days.] Sir Astley says further: "The medulla is compressed and contused and broken in severe fractures, with displacement, but the dura mater is not torn. At the level of the rupture of the medulla at each end of the broken medulla there is swelling of the cord within the dura, but the latter is not torn except by the vertebral arch, (one or more) being crushed down upon the dura mater." Sir Astley reports but one case of fracture of the spine with displacement, and that was in the dorso-lumbar region. The man lived one year with the ends of the ruptured medulla one inch apart. But I find but one case of fracture of the cervical vertebræ from *contre-coup*—that is, a fracture when the subject is in the standing or walking position, the blow falling on the top of the head. I have not the data at hand, but it also occurred from the impact of a bale of hay.

Report of the Microscopical Examination of the Cord by Dr. D. W. Montgomery.

I received a piece of the spinal cord about five inches in length, extending from the level of the atlas to below the level of the inferior surface of the first dorsal vertebra. About one inch of the cord opposite the point of fracture was almost entirely destroyed, and formed a large abscess cavity, pus escaping through a tear in the dura mater. It could be demonstrated that pus extended quite a distance up alongside of or in the spinal cord; for, by pressing on the cord and membranes at the level of the atlas, pus poured out of the rent in the dura mater at the point of fracture. There was a well formed adhesion (inflammatory) between a piece of the tattered dura mater and one of the muscles of the neck. On removing the cord from the spinal canal the membranes were found congested, the congestion extending up as high as the level of the upper border of the atlas. The cord was first hardened in Müller's fluid and afterwards put into alcohol, without previously washing out the Müller's fluid in water. After mounting in celloidin, transverse sections were made both above and below the point of fracture. Extensive degeneration of all the nerve elements had taken place. The large multi-polar nerve cells of the anterior cornua had undergone granular degeneration, and their nuclei were completely obliterated. There was extensive degeneration of the nerve fibres—the degeneration being more marked below than above the point of injury. There was an extensive syringomyelia throughout all the piece of the cord received for examination, the cavity being most marked in the cervical enlargement. The cavity was very irregular in outline, and the surrounding glioma was thick and well marked. In the upper part of the cord the cavity was fairly central, but in descending it ran outwards, backwards and to the left, lying, in the lower cervical region, along the inner side of the left posterior cornu. The syringomyelia, it is needless to say, had nothing to do with the injury, and existed long before the traumatism. The discovery of the syringomyelia is very interesting and raises the question as to whether the subject had exhibited any symptoms of spinal disease during life. These are often very obscure. Sensory disturbance and atrophic paralysis may be observed; trophic disturbances and vaso-motor paralysis may also be present.[1]

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[1] Breschet.

NEW DRUGS AND NEW METHODS IN THE TREATMENT OF DISEASE.

By G. L. Simmons, Jr., M. D., Sacramento, Cal.

Read before the Sacramento Society for Medical Improvement.

During the past year, spent in the medical centres of Europe, I have noted some advances in treatment and some changes, as well as investigations of new remedies and their adoption. Believing that a brief summary of the more important of these will be of interest, I have prepared the following notes:

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[1] Inquiry has elicited the fact that fourteen years ago the deceased fell down stairs, striking upon his head. From this he was unconscious "a minute or two." Twelve years ago he was thrown into the air some feet by the giving way of a tense rope against which he was standing. He fell head foremost and was unconscious "about fifteen minutes." He had never complained of any symptoms of spinal trouble during life.

Creolin, a derivative of the coal tar series, has been adopted by the Vienna Aural Clinic as a permanent antiseptic. It is a dense black fluid, making, with water, a milky solution, in $\frac{1}{10}$ per cent. strength, and having a strong odor of coal tar. Politzer advises its use for irrigation of the external auditory canal in strength of 5 to 10 drops to the litre of water. In the genito urinary department of the Vienna Clinic, it is used in 1 to 3 per cent. solutions for vaginitis and gonorrhea. Another disinfectant, perhaps less appreciated, is the *Superoxydized Hydrogen*—HO—in 6 per cent. solutions.

Iodol has now been some years in use, and its merits have been fairly canvassed in the capitals of Europe. It has a recognized position in the materia medica of England, France, Germany and Austria, but in surgical practice is inferior to iodoform, which it was no doubt intended to displace. In cases of glandular suppuration about the face, where the odor of iodoform is offensive, being so close to the organs of smell, iodol is perhaps preferable; also, where there is an intense disgust to the odor of the former drug. Its internal use is restricted. Tonka bean is used in Politzer's Clinic to mask this unpleasant fragrance, but with only partial success. The bean is placed within the bottle of powdered iodoform.

Thallin is used chiefly in cases of gonorrhea, in a solution of 1 per cent. in acute cases, while in chronic gonorrhea it is mixed with olive oil and injected in 5 per cent. strength, or applied in bougie form in same strength

Exalgine is a drug at present undergoing tests among clinicians. Its properties are stated to be as follows: Having the same sedative effects on the nervous system, as antipyrin, but requiring one-half the dose of the latter, and being less irritating to the stomach.

Sulphonal, the latest addition to the hypnotics, has already established a reputation. Opinions differ as to the correct dose, which varies from 15 to 30 grains. Its effects are happy in producing quiet, refreshing sleep, unattended by the subsequent depression of opium or morphine. Experience goes to show that the time when the effects of the drug are to be expected varies considerably, in some cases the evening dose not causing sleep until 12 hours after its ingestion. Another disadvantage is the costliness, which the average patient can ill afford. Its use in the very feeble is contraindicated, as it seems at times to weaken the heart's action.

Strophanthus, in the form of tincture, is holding a place with digitalis in the treatment of cardiac lesions. It is quicker in its action, is said to be non-cumulative, and prolongs systole. In long standing disease of the mitral orifice, where digitalis ceases to act beneficially, strophanthus has proved satisfactory. Uncertain preparations of this drug no doubt give rise to the varying results—that of Merck, of Darmstadt, being the best.

Chloride of Methyl has come into prominent notice of late, and has received much attention in Paris in minor surgery—for local anesthesia—also in cases of neuralgia, where benefit is derived from the use of freezing applications. Normally it is a gas, but under a pressure of six atmospheres becomes liquid. An ingenious and simple apparatus was contrived by Solante, an instrument maker of Paris, which greatly simplifies the use of this agent. It consists of a hollow, steel cylinder, 12 inches in length, and of a convenient circumference to easily hold in the hand. The ends are strongly closed and provided with cocks—one controlling the spray, the other allowing the entrance of air and lowering the pressure within the cylinder, thus changing the contained liquid to its gaseous state. The atmosphere is condensed by the spray, and the freezing action is very pronounced. Hayem, Professor of Materia Medica in the École de Médicine, is enthusiastic in its use for minor operations. On inquiry into its cost in California I find that the matter of expense is a serious one. A reservoir of strong metal is necessary to store the liquid, and its first cost is $27.50; filling this reservoir sufficient for a number of chargings of the cylinder, $7.50. Should a druggist in any town undertake the chargings, the question of cost would enter but slightly into the adoption or rejection of this new local anesthetic. But unless the price be reduced, the ordinary ether and ammonia spray will continue to serve our purposes.

Fisher's Test for Sugar in the Urine.—For years the accepted test for sugar in all life insurance examinations has been the "Trommer Test." On boiling, the red oxide of copper being produced if sugar is present in the urine. It is admittedly a defective test, in that hypoxanthine, mucus and uric acid also reduce the copper salt, while peptones and kreatin, in diabetic urine, interfere with this reduction. And there is but little doubt that many candidates for life insurance have been rejected through this uncertain reaction. The importance, then, of a decisive test is recognized. Ultzman, whose name is an authority in urinary examination, was emphatic in recommending "Fisher's Test" as the one reliable method of determining the presence of sugar in the urine. This test consists in the use of these reagents: Phenyl crystallin—a white, hygroscopic powder—and the acid carbonate of soda. The reaction of these upon diabetic urine, when heat is applied, results in the formation of yellowish needles of phenyl glucosaura, best seen under a low power of the microscope. Accordingly as the crystals are closely and thickly clustered, or few in number, the relative quantity of sugar present is estimated; thick clusters indicating a large quantity of saccharine matter. The method is fully as simple as Trommer's. About ten grains of the phenyl crystallin, with an equal quantity of acid carbonate of soda, are mixed in the test tube with three times the quantity of urine. The whole is then heated to boiling—it being impossible in this test to boil the urine over—then allow to cool, and the crystals, needle-shaped and in clusters, of phenyl glucosaura are deposited on the bottom of the tube. Small round bodies, consisting of hydrocin, of no importance clinically, may also be seen.

The following brief summary of the treatment of gonorrhea and syphilis, by the Vienna School, may be instructive:

Gonorrhea.—Refrain from injections in the presence of the more acute symptoms of the first stage, using in some cases irrigations of sodii bicarbonatis—gr. x to ℥i. In all cases the first treatment is internal. Besides the ordinary diluents, fl. ext. kava-kava is very popular in doses of gtt. xx, three times daily, well diluted. Salol in 3 gr. doses after meals is also given. Some advocate irrigations of creolin in 1 to 5 per cent. solution in the acute stage, but the drug is so powerful an irritant that it must be cautiously used. Its value consists in the destructive action on the gonococci. In chronic superficial inflammation of the posterior urethra a few drops of a 1 to 3 per cent. solution of nitrate of silver, deposited by a Pravaz syringe, is extremely beneficial, particularly when spermatorrhea coëxists. Where this complication is not present, the injection of a salve of $\frac{1}{10}$ per cent. iodine and 1 per cent. potassium iodide, mixed with lanolin as a basis, finds great favor. Irrigations with a Diday catheter of solution of potassii permanganatis 1:500, or zinci carbonatis 1:500, at intervals of two days, are also used.

Syphilis.—In this disease mercury is still the main reliance in the first stage, and is sometimes given alone in the second stage, though the mixed treatment of mercury and the iodides is more usually adopted; in the third stage iodine is used. France, Germany, Austria and England are united on this treatment. The method of administration and extent to which the medication should be carried, are as yet disputed questions.

The hypodermic method of giving mercury is favorably received by hospital authorities, for the reason that they can be sure the medicine has been given. The injections consist of 1 gr. of calomel, or $\frac{1}{10}$ gr. of the bichloride, in glycerine or sweet oil. The gluteal region is generally selected. The calomel injections are given at intervals of four to six days, about six being necessary to produce symptoms of salivation. The bichloride injections are repeated daily, and ordinarily require from 20 to 30 to salivate the patient. One patient, a woman, in Kaposi'sClinic—was still salivated four months after her last injection of calomel. Finger, docent, in the Syphilitic Clinic, holds that the germs of syphilis can be destroyed if the cautery be resorted to within the first 24 hours. Endermic injections of iodoform, 1 part, and glycerine, 2 parts, are quite efficacious in syphilitic pains.

In most cases of secondary syphilis—in the first eruption—the inunction treatment is recommended (mercurial ointment, or oleate of mercury—10 per cent.) In some individuals, whose skin is tender, or whose constitution is much weakened, this method is not advised. In such cases, the injection of mercury is preferable. In the light residual symptoms of the secondary stage mercury is given internally. In the severer forms of secondary syphilis the more vigorous method by inunction is employed. In tertiary cases, with light symptoms, iodine preparations are given alone; in severer cases, the same drug internally, and, in addition, the inunction or hypodermic use of mercury. If widely spread ulcerations, or numerous destructive hard gumma exist, baths of sublimate (1:4000) are of excellent service; baths should be given at a temperature of 28° to 29° R., in porcelain tubs, the patient remaining immersed from one-half to two hours, afterward remaining in bed for one hour. In tertiary affections of the periosteum, iodine is used. The vegetable tonics, combined with the iodine treatment in tertiary syphilis in cachectic individuals are valuable, and the decoction of Zittman—sarsaparilla root, sugar, alum, calomel, cinnabar and senna) is in great favor. In the latent periods, when no manifestations of the disease are present, and within the first two years after infection, the alternating use, in four-week courses, of mercury and iodine separately, with intervals of two to four months between the courses, is the routine method.

212 J street.

MEMORANDA.

Death from Rattlesnake Bite.

A. K——, æt. 12, resident of Garden Grove, on July 18th, 1889, about sundown, was pulling up beets, when he was bitten by a rattlesnake upon the right forearm; the rustling of the dry beet leaves, no doubt, prevented his hearing the warning rattle. The boy's sleeves were rolled up, and the snake struck him on the naked forearm, first, about two inches above the wrist, and again just below the olecranon. For about half an hour no treatment was adopted, the boy, meanwhile, running about frantically between his home and the neighbors. The first remedy suggested was placing the arm in a pan of milk, in which it was accordingly kept some time. The arm was next rubbed with triple H. H. Liniment. After 30 minutes some pure alcohol was obtained, and about 2 ozs. gradually administered. Previous to this he seemed to have had a tendency to spasms, with some frothing at the mouth. Brandy was then procured, of which he took between 1 and 2 ozs. A firm ligature was next applied to the arm, well above the elbow. A chicken was then killed, and the raw flesh applied to the wounds; and later, a cat was skinned, and the warm skin, hair outwards, was bound round the arm. Finally, the doctor was sent for. The patient lived about 4½ miles from Anaheim, and it was at least three hours from the time of the accident before I saw him. He was then unconscious, breathing easily, and somewhat faster than normal. The pulse was soft and regular at 110. He was constantly throwing himself about, and occasionally moaning; there was an incessant twitching of the muscles about the mouth. The pupils were contracted, and remained so throughout. The arm, up to the ligature, was intensely swollen and edematous, with bluish-black discolorations extending over the surface in many places; bullæ had also appeared. Near the wound the skin was detached in shreds, due, probably, to the free application of the liniment. The swelling and discoloration were so marked, that it was impossible to locate the punctures. I first cauterized several points with nitrate of silver—not with the idea of doing much good—and then injected 20 ms. of a 1 per cent. permanganate of potash solution well down into the tissues, in the neighborhood of the bites. Cloths, saturated with a 1 per cent. permanganate solution, were wrapped round the arm and the ligature reapplied higher up, as the swelling had passed above it. As the boy was evidently in a profound stupor from the alcohol, I decided to wait; but in about two hours he became restless, and whiskey was administered in ½ oz. doses, and directed to be continued during the night. He was very restless, throwing himself about continually, and the stimulant was repeatedly given, so that by morning he had taken over 20 ozs. Cloths, moistened with the solution, were constantly applied to the arm. At 6 A. M. he became conscious, and asked for some coffee, which was given him. Soon after, he vomited, became quite faint, and having exclaimed, "I am going to die," soon ceased to breathe. I saw him about 45 minutes after death. The arm was unchanged in appearance, enormously swollen and universally blackened. Black hemorrhagic spots were visible subcutaneously on the chest. The lips and tongue were very dark; the pupils still contracted. An autopsy was refused. I do not think that anything would have saved the patient, except, perhaps, prompt excision and vigorous suction. Absorption of the poison was, no doubt, greatly accelerated by the violent exercise immediately after the injury, and later by the application of the stimulating liniment. The snake was a powerful one, of the black-tailed, diamond-marked species (*crotalus molossus*), and had nine rattles. It struck twice fairly on the bare flesh, and must have injected a full dose of the poison. The day was quite warm, and it is generally believed that they strike more vigorously in hot weather.

J. H. BULLARD, M. D.

Anaheim, Cal.

An Unusual Case of Rape.

Soon after midday on the 5th of July, 1889, I was informed that the five-year-old daughter of J. P. Moran, of Berkeley, had been raped, and that my services were urgently needed. The messenger gave me no hint of any injury, but when I arrived at the house I found that the girl had received a severe wound, from which she was bleeding profusely, and that her nervous system was profoundly shocked. Chloroform was immediately administered, enabling me to make a thorough examination, which showed that the perineum had been torn clear through the sphincter ani, making the vagina and rectum into one passage for the space of about two inches. To my mind, the wound had been started by means of a dull knife or some such instrument, and completed with the finger. It was an irregular tear. No other wounds were visible on any part of the body. Her clothing was saturated with blood, but was untorn. The bed of the creek, where she was found, is some eight or ten feet deep, but there was no sharp projection upon which she could have fallen, while a pool of blood revealed the spot where the deed was committed. I immediately took deep sutures, bringing the parts into close apposition; placed absorbent cotton pads between thighs and knees and bandaged the legs closely together. The following day the temperature was 99.5 and pulse 108, which was the highest recorded at any stage. I found the patient would almost go into convulsions at the sight of a man, even her own father, so I strictly forbade the parents to allow anyone to see her, but I afterwards learned that from twenty to thirty people a day flocked to the house and were permitted to see the child. She was placed under the influence of anodynes for the double purpose of keeping her quiet and preventing the bowels from moving, but I afterwards ascertained that the mother who nursed her had given the medicine for a few days only, and then as the child would cry and spit it out she did not urge it upon her.

Strict directions were given in regard to diet, but at a later period I found apple seeds in the stools. However, all went well until the 12th of July, seven days after the occurrence, when, with Dr. Eastman, I made a thorough examination and found the parts almost entirely healed by primary union. We removed one stitch only, deciding to leave the others a few days longer for safety. Before removing them our intention was to carefully move the bowels by enemata. Two days later the child passed an enormous, hard mass of feces, which tore the remaining stitches out and separated the newly united parts, literally undoing the whole work. After consultation I decided to send the patient to the California Woman's Hospital, where she could receive the best of care, and undergo a second operation with the hope of better success. The shock to the nervous system I regard as the very worst feature of the case, which may take years to overcome. F. H. PAYNE, M. D.

Berkeley, Cal.

DEPARTMENTS.

OBSTETRICS, GYNECOLOGY AND PEDIATRICS.

By WALLACE A. BRIGGS, M. D., Sacramento, Cal.

Precocious Marriage and its Consequences.—From his observations in Syria DR. RANVIER concludes: (1) That precocious marriage diminishes fecundity. (2) That it increases the ratio of abortion. (3) That premature intercourse and child-bearing favor the development of uterine inflammation, displacement, and deformity.—*Annales de Gynécologie*, March, 1889.

The Disorders of Menstruation.—DR. CURRIER classifies them as follows: (1) Amenorrhea—absence of the menstrual flow. (2) Dysmenorrhea—obstructed menstrual flow. (3) Oligomenorrhea—scantiness or insufficiency of the menstrual flow. (4) Polymenorrhea—excessive menstrual flow. (5) Atopomenorrhea—a menstrual flow which is out of place or unwonted. The following general principles are usually admitted: (1) Races or tribes that are least removed from animals most resemble animals in respect to the menstrual function. (2) Nervous women seldom menstruate without discomfort. They frequently have dysmenorrhea or oligomenorrhea. (3) Influences located in the vascular system may be sufficient to determine great abnormities in menstruation. A very weak heart may determine a scanty flow, and a very strong heart a profuse one. (4) Great emotions with diminished atmospheric pressure favor profuse menstruation. (5) A humid atmosphere is frequently a concomitant and probably a cause of amenorrhea, dysmenorrhea, or oligomenorrhea, owing to change in the pressure relations between the atmosphere and the fluids and gases of the body. (6) Women menstruate earlier in hot climates than in cold. In tropical climates it is not unusual for the first menstruation to occur between the ages of eight and twelve years. (7) Extreme cold is always unfavorable to the easy and regular performance of the menstrual function.—*Gaillard's Medical Journal*, May, 1889.

Value of the Diagnostic Tampon in Chronic Endometritis.—If a cotton tampon saturated with a 25 per cent. glycerole of tannin be placed against the clean cervix uteri, says DR. SCHULTZE, the following phenomena ensue: The glycerine withdraws from the surrounding tissues secretions, whose liquid portion filters through the cotton and escapes externally. On removing the tampon 24 or 48 hours after its introduction there is found behind it a residue of secretions—transparent, like healthy mucus, if the uterus is healthy, clouded if either the cervix or body is inflamed and occasionally consisting merely of epithelial detritus from the cervix or vagina. If neither the cervix nor the vagina is diseased the secretion will be scanty, and patients suffering from chronic corporeal endometritis sometimes deny the existence of any leucorrheal discharge whatever. It is only when the cervix is inflamed that the uterine secretion becomes really abundant. With the diagnostic tampon all of the secretion is collected and its pathological significance may then be determined. It is not the *quantity* of the secretion that furnishes precise information in regard to endometritis, it is rather the *quality* of the secretion, and especially its ratio of pus. Pus emanating from the cervix is mixed with a larger quantity of mucus than that from the corpus and is thicker, except in case of erosion or ectropion. In corporeal endometritis, even when purulent, the secretion is so scanty that the tampon must be left in place at least 24 hours to collect a sufficient quantity for recognition, but, however scanty, its purulent character, particularly if combined with sanguinolence, indicates inflammatory action in the corporeal endometrium. Many cases of dysmenorrhea and sterility ascribed to "nervousness" are due to slight endometritis, which will be revealed by the diagnostic tampon. This is likewise true of certain dyspeptic troubles, lumbar pains and migraine. The discharge may be completely suspended for some hours—a fact to be kept in mind in diagnosis, or the secretion itself may be periodical. Intermediate pain (*la douleur dans le milieu*) is due to a secretion restricted to a short period; the tampon proves it. As uterine catarrh is one of the most frequent diseases of the female genital organs, and one which, more than any other, awakes reflex disturbances in distant organs and thus leads to errors in diagnosis; as simple uterine catarrh profoundly affects the entire organism, is a grave cause of sterility and becomes in its turn the cause of other diseases of the sexual organs, it is plainly of the greatest importance that its existence should not escape the knowledge of the physician. The trial tampon will furnish most valuable information for diagnostic purposes.—*Gazette de Gynècologie*, June 1, 1889.

SURGERY.

By T. W. HUNTINGTON, B. A., M. D., Surgeon Southern Pacific Company's Hospital,
Sacramento, Cal., and
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Surgeon German Hospital, San Francisco, Cal.

Determination of Intestinal Perforation by Senn's Method.—In a paper entitled "Two Cases of Laparotomy for Penetrating Wounds of the Abdomen," A. T. CABOT, of Boston, comments as follows upon Senn's method: That it is possible in most cases to demonstrate the existence of a perforation of the intestine by a gaseous insufflation has been abundantly shown. Whether the injection of hydrogen furnishes an infallible test may well be doubted. The abdominal wall being made up of separate layers of muscles and other tissues which shift upon each other with every movement of the body, it must now and then happen that the opening through it is tightly closed, and will not permit the passage of gas that has escaped among the intestines. Errors from this cause may generally be avoided by the introduction through the wound of a pair of dressing forceps, a director or a tube; but with a thick, fat, abdominal wall these measures may fail, especially if the omentum plugs the wound on the inside. Again, suppose a bullet perforated a coil of intestine that is full of liquid feces. It is evident that the gas cannot escape until it has pushed the liquid out before it. If it is acknowledged that the gas will sometimes not escape even though the intestine is injured, what guidance does the surgeon get from its use in deciding the question whether or not to explore the abdomen? In the cases in which the gas test succeeds in demonstrating a perforation, we shall certainly do laparotomy. But what are we to do in the cases in which it does not succeed? This is the question which the surgeon has to meet; and until it is shown that the fear that in a certain proportion of cases of perforation the test will fail, is groundless, he must either do a laparotomy, whether the gas does or does not issue through the external wound, or he must expect to leave some cases of perforation not operated upon. It must also be remembered that perforation of the intestine is not the only injury wrought by penetrating wounds, which it is the surgeon's duty to rectify. Serious laceration of the mesenteric or other vessels may exist, as is evidenced by two of Dr. Senn's cases of intestinal suture, wherein the ligation of important vessels was one of the important benefits of the operation. Dr. Senn says that the gas is aseptic, and therefore innocuous. Does he mean by this that the gas, after passing through many feet of intestine, enters the peritoneal cavity in an aseptic condition? And what is to be said of the intestinal contents that the gas drives along with it? They are certainly not aseptic, and it is, therefore, evident that there is a strong possibility that the injection of gas may add to the dangers of a given case and should not be lightly used. There is another use of gaseous insufflation to which Dr. Senn calls attention, which may be of great service. After closing all of the perforations that he could find, he again injected hydrogen into the rectum, and it at once bubbled up from the pelvis. Following down the sigmoid flexure, and compressing it at various points, the gas still escaped until he reached the rectum where he found and closed a last wound. This application of insufflation, after all the openings that can be readily found have been closed, seems to be of undoubted value. The gas escapes at once into the air, and does not carry impurities throughout the abdominal cavity, and if fecal matter escape, it is at once perceived and quickly removed by irrigation. For this exploration, it would seem that air would be equally good with hydrogen gas.—*Boston Medical and Surgical Journal.*

Surgery of the Spine.—DR. J. WILLIAM WHITE thus summarizes the conclusions which seem to be warranted by his most exhaustive survey of the history of spinal operations from early times to the present day. His paper is an exceedingly valuable contribution to the literature of this subject. (1) The objections used against operative interference in spinal traumatisms, were partly theoretical, hemorrhage, frequency of absolute destruction of the cord, pressure from inaccessible fragments of bone, etc., and have been shown to be unsupported by clinical facts, and were largely due to a well-founded dread of—(*a*) the shock in those cases operated on in pre-anesthetic days; and, (*b*) consecutive inflammation, suppuration in the pre-antiseptic periods. The later results, which now constitute our only safe basis for generalization, are distinctly encouraging, and resections of portions of the vertebræ in fractures, possibly even in dislocations, should be recognized as an eminently proper operation, and, in suitable cases, altogether warranted by facts in our possession; and, further, such cases are by no means rare or exceptional. (2) There can be still less doubt that the testimony of both pathologists and practical surgeons indicates that the cause of the paralysis of Potts' disease is, in many instances, an extra-medullary proliferation of connective tissue, assuming the density and proportions of a neoplasm, occupying the space between the dura and the anterior surface of the laminæ, not apt to be associated with intra-medullary changes, or with destructive degeneration of the cord, and very frequently removable by operation. (3) Every case of focal spinal lesion, thought to depend on a tumor and not distinctly a malignant and generalized disease, should be regarded as amenable to operative interference, no matter how marked the symptoms of pressure may be, nor how long continued. (4) The method of extension, as recently revived, is well worthy of preliminary trial in the first two classes (traumatisms and caries), and in obscure cases, thought to belong to the third class (neoplasms). It has not yet been tried in a sufficiently large number of cases to establish its exact limitations, but it is, unquestionably, a therapeutic measure of vast importance in spinal injury and disease. (5) It is customary and proper in deciding upon any serious surgical procedure, involving risk to life, to consider well the prospects of the patient in the event of non-interference, and to be largely influenced by them. Looked at in this light, the surgery of the spine, as regards traumatisms, caries and neoplasms, may fairly be said to have a rapidly widening field to deserve more serious and careful consideration by practical surgeons than it has received for many years.—*Annals of Surgery.*

Two Suggestions for Improving the Operation of Excision of the Knee-Joint for Strumous Disease.—A. G. MILLER, M. D., of Edinburgh, describes his method of knee-joint excision as follows: After reflecting a semi-lunar flap of skin upwards, well above the patella, I cut through the tendon of the extensor of the thigh, a little above the patella, and also through the fibres of the vasti, internal and external. In this way the synovial membrane is exposed, and it is then quite easy, cutting in the cellular tissue covering it, to push up the muscular substance, and to draw down the thickened synovial membrane, which comes readily off the periosteum, and has then to be cut at its attachment round the articular surface of the femur. In this way four-fifths of the synovial membrane is removed in one mass, with the patella imbedded in it. Those portions of the membrane that cover the ligaments are then removed by the use of Lister's sharp spoon. The ligaments should be scraped till they appear clean and white. They are then cut through to permit of complete flexion of the joint, and the operation is completed by removal of a sufficient amount of bone. There is another procedure which I recommend. Formerly, in dressing knee-excision cases, I was much troubled by loose, redundant skin, which lay in a troublesome manner over the approximated bones. To obviate this, I act as follows: After making an incision from behind the one condyle to the other, across the front of the knee, and at the level of the top of the tibia, I make another cut, commencing and terminating at the same points, but over the centre of the patella. These two incisions include an eliptical portion of skin, which is left attached, and the skin is dissected up over the synovial membrane from the upper cut, as described above.—*Edinburgh Medical Journal.*

OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

By Wm. Ellery Briggs, M.D., Sacramento, Cal.

Pilocarpine in Deafness.—Field recommends the hypodermic injection of pilocarpine in bad cases of deafness, especially where labarynthine mischief is suspected. Dr. Woodhouse has used this treatment in five cases. He began by injecting $\frac{1}{15}$ of a grain and increased it gradually to ¼ of a grain once daily. In the five cases there was one which seemed to improve for a short time, but at the end of the treatment no perceptible benefit could be determined in any case. The injections were kept up for from one week to one month.—*British Medical Journal*, July 20, 1889.

Squint Operation.—In an address at the Yorkshire branch of the British Medical Association (*British Medical Journal*, July 13, 1889), Mr. Simeon Snell said that this generation had witnessed many improvements in the operation for squint. The objects to be attained by an operation have become well understood, and though the board schools and other educational establishments are still busy aiding in manufacturing the article, and the supply is as large, it is the experience perhaps of every operator, that, comparatively speaking, he submits fewer squints to operation than was even a few years ago the case. The reason of this is easily stated. It is our better knowledge of the relations of optical errors to strabismus, and our increased facilities by retinoscopy and other means of estimating the degree of hypermetropia or astigmatism present, and the prescribing appropriate glasses. In this way cases are frequently cured without operation, and if they were seen sufficiently early, this would generally be the case. Age is hardly a bar to wearing glasses for this purpose. The author has frequently prescribed them for children of three, and sometimes at a less age, and considering that it is generally after this age that squint commences, there is usually little difficulty in the matter of spectacles. Even in cases that come under operation, the tenotomy is limited as much as possible, the after-correction of refractive errors being allowed to complete the cure.

Disease of the Mastoid Process.—DR. ADOLF BRONNER reports six cases of mastoid disease upon which he had operated. After discussing the indications at some length he sums up the important facts to which he wishes to draw attention as follows: (1) That very extensive and dangerous changes may be going on in the mastoid process without any well marked symptoms. (2) That affections of the mastoid process very frequently, much more frequently than is generally supposed, give rise to intracranial inflammation, pyemia, general or local tuberculosis. (3) That we ought in all chronic cases never be satisfied with Wilde's incision, but ought to carefully examine the periosteum and osseous tissues of the mastoid process. (4) That the chisel is the most useful and effective instrument for operating on the mastoid process. (5) That the mastoid process ought to be operated on also in the following cases: (*a*) In all cases of chronic otorrhea in which local treatment has failed, especially in tubercular subjects, except in cases of perforation of Sharpnell's membrane. (*b*) In all cases of fistula of the mastoid process. (*c*) In all cases of recurrent mastoid abscess.—*Medical Press and Circular*, July 31, 1889.

Simple Chronic Glaucoma.—DR. CHAS. STEDMAN BULL at the twenty-fifth annual meeting of the American Ophthalmological Society gave a detailed account of ninety cases of simple chronic glaucoma, with special reference to the effect of iridectomy upon the acuity of vision and the visual field. As a result of his study he formulated the following conclusions: (1) In considering the expediency of an operation in chronic glaucoma, he quotes the following passage from Priestly Smith: "In every case of chronic glaucoma the responsibility of advising an operation is a heavy one, and should on no account be undertaken without a full explanation to the patient or his friends of the almost positive certainty of blindness on the one hand and of the uncertainties which beset the operation on the other. Having regard to the age of the patient, the impossibility of great benefit, and the possibility of a painful and accelerated progress, the prudent surgeon will only operate on the express desire of the patient to secure the only possible chance of benefit, however small it may be." Armed with the preceding precaution, it seems to be our duty to operate in cases of chronic progressive glaucoma, and the earlier the better. (2) If the disease in a given case seems to be stationary and is still in the primary stage. and if it be possible to test the vision and the visual field at short intervals, delay in operating is permissible; but a weak solution of eserine or pilocarpine should be used daily, merely as an aid in controlling the course of the disease. The examination of these patients should be at short intervals, and should invariably include tests for visual acuity and careful examination of the visual field. (3) If the disease exists in both eyes, but with useful vision in both, the eye in which the disease is the more advanced should be operated on without delay; and the surgeon will be guided in his treatment of the fellow eye by the result of the operation on the first eye. (4) To insure the best results, the incision should be made well in the sclerotic, with a narrow cataract knife or a broad lance knife; and the entire iris, from one end of the incision to the other, should be carefully torn or excised from its insertion. (5) The most carefully performed iridectomy by skillful hands is sometimes followed by rapid loss of what sight still remains, sometimes partial, but unfortunately sometimes total. (6) A successful result is, in the majority of cases, more likely to follow the operation if it is performed early in the course of the disease; but the maintenance of the existing degree of vision, even in these cases, is not invariable. (7) As regards the question of symmetry, it is probable that in the large majority of cases, probably as much as eighty per cent., the disease is sooner or later present in both eyes; and a careful study of the cases seems to establish the fact that there can be no specific interval of time which insures the second eye against an attack. (8) If the patient is old and feeble, and one eye is still free from disease for a year or more after the other eye has become affected, it may be considered prudent to avoid an operation on the affected eye, as it is probable that the unaffected eye may remain free during the remainder of the patient's life. (9) The condition of the field of vision is no constant guide either in forming a prognosis as to the progress of the disease or in deciding as to the time of operation. (10) The acuity of vision bears no constant relation to either the success or failure of the operation. (11) The anterior chamber is usually shallow, is occasionally entirely absent, but is often apparently normal in depth. The condition of the chamber gives no reliable hint as to the state of the vision or the visual field, nor any indication as to prognosis. (12) The appearance and motility of the iris appear to have some bearing upon the prognosis, though perhaps not to the extent believed by Nettleship. The latter states that in the cases in which the iris reacts rapidly to eserine the operation proves successful. This has not always been the experience of the author, but in the majority of the cases in which eserine caused rapid contraction of the pupil, the visual acuity was fairly good, and the field was not seriously limited. (13) The depth of the excavation in, and the color of the optic disc seem to have no close relation with the defective vision or with the limitation of the visual field, nor did they offer any constant guide as to prognosis or to the effect of an operation upon the progress of the disease. (14) The condition of intra-ocular tension is a very uncertain guide in deciding the time for operating. It may be normal or increased or even diminished. It does not seem to bear any constant relation to the degree of visual acuity or to the state of the visual field. The steady maintenance of the increased tension, however, without any diminution, almost invariably indicates the necessity for an immediate operation; and this necessity is as especially indicated if the tension is constantly on the increase. (15) The health and age of the patient exert a decided influence upon the effect of an operation. Any marked evidence of senility is decidedly unfavorable to operation.—*Boston Medical and Surgical Journal*, Aug. 8, 1889.

DERMATOLOGY AND VENEREAL DISEASES.

By G. L. Simmons, Jr., M.D., Sacramento, Cal., and
D. W. Montgomery, M.D., Professor of Pathology, University of California, San Francisco.

Leprosy in England.—Mr. Jonathan Hutchinson, in a paper on "Acquired Leprosy as Observed in England" (*British Medical Journal*), says, that in searching for the mode of contagion a favorable opportunity is afforded by those who, previously to having the disease, lived in England where leprosy, at the present time, is most decidedly not endemic; and, after residing for some time in a country where leprosy is endemic, catch the disease. Generally all errors from possible inheritance may be excluded. These patients also give more accurate histories, and more detailed accounts of their mode of life than natives of foreign countries. Mr. Hutchinson believes that the profession is not divided sharply into two camps—one side asserting that leprosy is contagious and the other that it is not—but rather that, while no one denies the possibility of contagion in the non-practical sense, yet nearly all observers doubt if contagion really plays a great part in the spread of the disease. A recent experiment (the inoculation of the criminal condemned to death in the Sandwich Islands) appears to have proved that contagion can be artificially effected, but it does not prove, and is very far from making probable that accidental contagion is common or easy. He maintains that in order to contract the disease another condition is necessary—that of food. Father Damien acquired the disease, and so did a German officer in Norway, but both had lived with lepers and partook of the same kind of food. The situation of the bacilli in the true skin, and not in the epidermis, nor in the granulations of healing ulcers, explains the difficulty of contagion taking place. The similarity of the manifestations of the disease in all climates, and under all conditions, points to the cause being unique. There can be no doubt that the cause is a specific one, as specific as that of syphilis or small-pox, and the discovery of the bacillus gives the probable cause of the specificity and sameness of the disease under the most varying circumstances. From what is granted and considered beyond dispute about the disease, he feels sure that its spread cannot be due to contagion; that it is not owing to poverty, filth or hardship; and that it is not dependent on climate, so that the inquiry limits itself to the food supply. He thinks it is owing to some special kind of poison of rare occurrence taken with the food. We now know enough about the clinical history and pathological anatomy, and we accept the bacillus in some sense as the cause of the disease. He suggests that the spores be searched for in some article of food. He cites a case of leprosy, which came under his observation, as affording an example of his peculiar views, that the virus of the disease is contained in fish. A Jewish woman returned to England, at the age of 44, from Jamaica, where she had lived for 11 years. She was born in Portsmouth, and had lived in England up to 32 years of age. On her return she was suffering from a most severe form of tubercular leprosy, which improved and finally got completely well before her death at 71 years of age. This case proves—(1) That leprosy may be acquired without inheritance, by residence in a district where it is endemic. (2) That it is not necessary that there should be any exposure to hardship or poor food, for the patient while in Jamaica, and afterward in England, was in comfortable circumstances. (3) and most important—That the leprosy processes may come entirely to an end during residence in England. (4) As regards the food hypothesis, we have the fact that the patient had eaten fish freely in Jamaica—almost every day—and that she abstained from it in England.

MATERIA MEDICA AND THERAPEUTICS.

By WM. WATT KERR, M. A., M. B., C. M., Professor of Clinical Medicine, University of California, San Francisco.

Nitrate of Silver in Purpura.—Dr. POULET, of Planchet-les-Mines, has for many years made use of nitrate of silver in severe cases of purpura, complicated by copious hemorrhages from the nose, stomach and bowels. He narrates two cases which seem to point to a distinct controlling influence over the morbid condition. He gives it in doses of from one-eighth to one-sixth of a grain, made into a pill with bread crumbs, twice or three times a day. It is seldom necessary to continue the treatment beyond four days, and the effect is prompt and satisfactory.—*Medical Press and Circular*, June 12, 1889.

Uralium.—The latest of hypnotics, "uralium," is produced by the combination of chloral and urethan. It is prepared by SIG. GUSTAVO POPPI, of Bologna, a medical student, who declares, with all the ardor of youth, that it is the best of hypnotics. Considering that chloral is a halogen compound of the primary monatomic alcohol series, and that halogens of the series are cardiac poisons, the remedy does not commend itself by its chemical composition. No doubt the ammonium base of the urethan counteract in part the depressing action of the chloral; nevertheless the new hypnotic does not commend itself to us.—*Dublin Journal of Medical Science*, June, 1889.

An Arrow Poison.—A letter from HENRY M. STANLEY, which was read at a recent meeting of the Royal Geographical Society, contained an interesting reference to the arrow poison employed by the natives of the Lower Congo district, and it afforded a curious insight into the strange perversions of knowledge by which the advances of civilization are retarded. Stanley says that they were much exercised as to what might be the poison on the heads of the arrows by which Lieutenant Stairs and several others were wounded, and from the effects of which four persons died almost directly. The mystery was solved by finding at Arisibba several packages of dried red ants. The bodies of these insects were dried, ground into powder, cooked in palm oil, and smeared on the points of the arrows. It is well known that formic acid exists in the free state in red ants, as well as in stinging nettles, and in several species of caterpillars. This acid is, in the pure state, so corrosive that it produces blisters on the skin, and hence there is little ground for doubting that it was the deadly irritant by which so many men had been lost with such terrible suffering. The multitude of curious insects encountered, which rendered their lives "as miserable as they could well be," bears out Mr. Stanley's idea that many similar poisons could be prepared from insects. It certainly is strange that, with the exception of cantharides, and perhaps of blatta orientalis, the insect world is so little used for active therapeutics.—*American Journal of Medical Sciences*, June, 1889.

Caustic Potash and Carbolic Acid in Ringworm.—Two years ago MR. HARRISON, Bristol, England, advocated an application of caustic potash to the scalp for the purpose of softening the tissues as a preliminary to the use of a parasiticide in the treatment of ringworn. Mr. Harrison after prolonged experience suggests the following combination as an improvement upon the original method. He combines the remedies in an ointment composed of caustic potash, nine grains; carbolic acid, twenty-four grains; lanolin and cocoanut oil, of each half an ounce. To this may be added some perfume, and a small quantity of it rubbed into the affected parts night and morning. The caustic potash contained in the ointment acts upon and softens the hair-matter and in this way allows the carbolic acid to have free access to the fungus and its spores. The author thinks that there is a decided advantage in leaving, when it can be done, as much as a quarter of an inch of hair; the ointment seems to have better play and is kept in the part affected. To prevent the spread of the disease among children exposed to it, the following ointment is applied to their heads: boracic acid and oil of eucalyptus, of each two ounces; oil of cloves, one-half fluid drachm; oil of cocoanut, sufficient to make six ounces.—*Medical and Surgical Reporter*, June 22, 1889.

Creolin.—DR. EDWARD O. OTIS read an interesting paper on this subject at a recent meeting of the Boston Society for Medical Observation. The entire paper with references to the bibliography of the subject will be found in the *Boston Medical and Snrgical Journal*, June 22, 1889. The following is a summary of the more important facts. Creolin is a mixture of the sodium salts of some resinous acids, with the part of the oil of tar known as "irod oil." It is obtained from English pit coal by distillation and is an oily brown fluid. Creolin is claimed to be a non-poisonous germicide and antiseptic; one of the most perfect deodorants; to a certain extent a hemostatic; and possessing qualities which diminish secretion and promote granulation. Moreover it exercises a most happy effect upon unhealthy and pus secreting mucous membranes. Finally, it is a non-irritant. For the ordinary purposes of an antiseptic dressing in operative surgery, two solutions are required—the one of two per cent. for cleansing the parts, hands, instruments, etc.; the other of one-half per cent. for irrigating the wound, and in which to wet the gauze dressings if used. Where a powder is desired to dust over the line of sutures, or for other uses, creolin with boracic acid can be used; (creolin 3 parts, boracic acid 100 parts). For burns a one per cent. solution of creolin in oil, vaseline, or lanolin can be used, or the limb can be kept swung in a bath containing a one-half per cent. aqueous solution. For suppurating wounds, abscesses, felons and buboes a half per cent. aqueous solution will be found to be sufficient, and the same solution makes an excellent uterine or vaginal douche. In cystitis it should not be stronger than one in five hundred. It is also a useful application in diseases of the respiratory and buccal mucous membranes, the average strength of the douche being from one-half to one per cent.

MEDICINE AND PATHOLOGY.

By ALBERT ABRAMS, M. D., Demonstrator of Pathology, Cooper Medical College, San Francisco, Cal.

Signs of the Moribund Condition.—The following conclusions are reached by DR. JOHN SHRADY in the discussion of this subject: (1) That in general the signs of death that are the most trustworthy appear to the eye. (2) That among these the respiratory function holds the first rank, both in cases of coma and asthenia, more noticeably when the two modes of death are blended. (3) That the death by coma represents, in duration, the longest duration. (4) That the most valuable sign of inevitable dissolution is the up and down movement of the pomum Adami, always providing that it be persistent. (5) The temperature changes deserve recognition, particularly when the curves are sharp, high, and continuous, or when they are below the normal. (6) That an intermittent pulse is an early sign of death, especially when not due to any disturbed action of the nervous system. The qualification necessary to save this statement from being absolute, lies in the fact that occasionally individuals are found who maintain this peculiarity through a long, healthful life. (7) That deaths from syncope are too sudden to allow of much observation or study. —*Medical Record*, June 8, 1889. [The diagnosis of death is not more superfluous than that of disease. The fear of "being buried alive" exists no longer in the imagination, and its consummation is more than apocryphal. In those instances where premature burial has been frustrated, simulated death was not always made obvious to the physician by methodical examination. Some time ago I presented the following queries to medical friends, from whom 50 replies were received. (1) When a patient dies do you make any examination with a view of determining whether death really exists? (2) What means do you employ for such determination? To the first inquiry the answers were mainly in the negative; to the second, the most crude tests were accepted as positive. Every death certificate should embody among its interrogatories one which will positively establish the existence of death. One of the most positive early symptoms of death, the pursuance of which in every case indiscriminately should be made compulsory, is that obtained by means of the Faradic current. Its employment is dependent on the fact that the electro-muscular contractility begins to sink upon the supervention of death, the reaction to the current becoming weaker, and finally suspended entirely, in from 1½ to 3 hours. Rosenthal, to whom the perfection of this method is largely due, succeeded in saving from the grave an hysterical woman, who lay for 32 hours deprived of apparent vitality. —A. A.]

The Nature and Treatment of Gout.—Dr. Emil Pfeiffer formulates the following conclusions: (1) The uric acid diathesis consists of the presence in the body of uric acid, soluble with difficulty, and a tendency of the same to become deposited in the tissues. (2) As a consequence of this comparatively insoluble uric acid, it is not excreted as soon as formed, but is deposited in the tissues, either as a diffuse infiltration or in the form of circumscribed nodules. (3) The first effect in retention of uric acid is a diminished excretion of the same, which, if allowed to go on, results in a disturbance of nutrition and limited elimination of urea and uric acid. (4) A paroxysm of gout, either acute or chronic, is occasioned by the digestive secretion becoming more alkaline, which increases the solubility of the uric acid; it is the sudden excretion of large quantities of uric acid which induces pain and inflammatory phenomena. Pfeiffer completely overthrows the usually accepted view that in gout the excretion of uric acid is increased; on the contrary, in the earlier stages of the disease, the uric acid eliminated is less than normal. The essential part of his treatment consists in promoting the excretion of uric acid, which is best attained by a regulation of the diet. The patients must partake largely of albuminates consisting of meat and eggs, whereas carbohydrates are interdicted. Spirituous drinks are prohibited. Alkaline mineral waters are especially indicated, particularly those containing the carbonic acid salts. The salts of lithium are only of minor importance in facilitating the uric acid excretion. In the treatment of acute gout, the object to be attained is the elimination of the poorly soluble uric acid deposited in the tissues with as little pain as possible. Salicylate of soda is the agent to be relied on for the accomplishment of this object. When this drug is administered to normal subjects in doses of from 3 to 6 grammes, an enormous increase in the excretion of uric acid is noted. Although salicylate of soda is an excellent remedy for the painful paroxysms of gout, in a large number of cases it is without action. Physical activity, even during the paroxysms, must be enjoined. All local treatment is valueless.—*Deutsche med. Wochenschrift*, May 23, 1889.

The Treatment of Phthisis by Inhalations of Hot Air.—This method, which has been recommended within the past year by Weigert and others, is based on the supposition that the inhalations of hot air are destructive to the bacilli of tuberculosis inhibiting their multiplication in the lungs. The constant disappointments attending the introduction of new methods for the cure of this intractable disease, coupled with the questionable conduct of Weigert in patenting his apparatus and publishing a popular treatise on consumption, have much to do with the indifference manifested by the profession toward the hot-air treatment. PROF. A. JACOBI, in a recent address before the New York Academy of Medicine, is not very sanguine in view of the results thus far obtained by this method of treatment. In a number of cases the cough was intensified, and with difficulty controlled. Two male patients, after using the apparatus, suffered from exhaustion and vomiting, which disappeared only after discontinuing the treatment.—*Medicin. Monatschrift*, July, 1889. DR. GEO. G. SEARS draws the following conclusions from a small number of cases treated by this method: (1) Cases so treated differed but little in their course from those treated by the older methods. Whatever gain was noticed seemed more justly attributed to the expansion of the lungs from forced inspirations than to any effects of the hot air *per se*. (2) Little influence can be expected from it upon the development of the bacilli. Any germicidal action it may have is largely exerted in sterilizing the bronchial secretion, and it is to be looked upon rather as a prophylactic measure against the spread of the disease than as curative in any particular case. (3) While it is not proven that the occurrence of hemorrhage in these cases was not all dependent upon the form of treatment, theoretical considerations make it probable that it increases the tendency thereto and suggests caution in its use.—*Boston Medical and Surgical Journal*, July 11, 1889.

Compensatory Intestinal Digestion in Diseases of the Stomach.—DR. BOAS has succeeded in numerous cases in extracting intestinal secretion from the stomach. This can be accomplished in patients who suffer from habitual vomiting. The passage of intestinal secretion into the stomach is facilitated by the introduction of the stomach tube in the horizontal position, and by massage of the gall bladder, hepatic and pancreatic regions. The fluid thus obtained is yellowish green, slightly alkaline or acid, with a specific gravity of 1009 to 1010. It is well known that bile will readily decompose, notwithstanding its manifest anti-fermentative action in the intestines. Boas has shown that the addition of an acid will retard putrefaction of the bile, and no acid is more efficient than hydrochloric. Lucin and tyrosine could likewise be demonstrated; and albumen was only occasionally found. Contrary to the usually accepted opinion, it was demonstrated that the digestion of albumen did not occur as rapidly with trypsin as with pepsine and ptyalin. For the breaking up of fats, the bile and pancreatic juice are of little value. Further experiments proved that in disease of the stomach vicarious digestion took place in the intestines.—*Muenchener medicin. Wochenschr.*, July 9, 1889.

The Pathology of Sensory Aphasia.—DR. M. ALLEN STARR analyzes fifty cases of this affection in which Broca's centre was not diseased. In all the cases collected some form of sensory aphasia was present, and in all the lesion was situated in the posterior lower third of the brain. In seven of the cases, pure word deafness was present, and in these the lesion was limited to the posterior portion of the first and second temporal convolutions. In eleven cases, pure word blindness existed, and the lesions found were either in the angular gyrus, the occipital lobe, the temporal convolutions, or the inferior parietal region. Word-deafness and word-blindness were coëxistent in seven cases, although the use of language was not lost, and in these the temporal convolutions were involved, excepting in some to the inferior parietal, angular and occipital convolutions. He believes that localizing the lesions of aphasia is of practical value, for the regions concerned in speech are especially accessible to the surgeon. It seems to be proven that there is no ideational centre. An idea may be impaired but can not wholly be destroyed by a single cortical lesion. Thought, being regarded as a play of consciousness along association-fibres between sensory centres can not be localized.—*Medieal Record*, July 27, 1889.

MENTAL DISEASES AND MEDICAL JURISPRUDENCE.

By W. H. MAYS, M. D.; Professor of Mental Diseases and Medical Jurisprudence, University of California, San Francisco.

Degeneracy.—Among writers on Insanity, living or dead, DR. MAUDSLEY'S claim to the first rank will never be disputed. To many, however, his logic is marred by the vein of pessimism that permeates it. In his latest work, "Body and Will," a section is devoted to the consideration of degeneration, moral and intellectual. The development of a case of moral degeneracy, through three generations, he represents as follows: First generation: absence of exercise of the higher social sensibilities and powers, and their decay from disuse. This allows unchecked exercise of the egoistic passions in the conduct of life. Second generation: there appears such a development of vice in character as falls little short of insanity or crime. Third generation: here we find positive moral imbecility, with or without intellectual derangement. This is the pedigree of a hereditary criminal. It goes to emphasize the great lesson that "the acquired infirmity of one generation will become the natural deficiency of a succeeding one." But degeneracy is part of the order of the universe. "The common lot of life is slow acquisition, equilibrium for a time, then a gentle decline that soon becomes a rapid decay, and finally death." To this law, systems and suns and worlds are as surely doomed as are nations and individuals. From chaos up through the mounting cycles of evolution, then degeneration, dissolution and chaos again; so swings the mighty pendulum through countless eons of time, forward and then backward. "Once the dissolution of things has got full start, it will be vastly quicker than the evolution has been. Humanity in its retrograde process will produce new savages with specially repulsive characters—savages of a decomposing civilization." Dr. Maudsley even hints that we have already started on the down grade, and that our ideals are ever growing worse. Such evolution as is now going on is not tending to the greater happiness of mankind. By way of conclusion he sadly reëchoes the reflection of Solomon concerning the vexation and the littleness of life, "Vanity of vanities, all is vanity." This sounds like hopeless pessimism, but the career of Dr. Maudsley gives a demand to it. His has been a strenuous life, and he has done at least something by his labors in psychiatry and criminal responsibility to advance human knowledge and improve the condition of the race. This would suggest that he has still a latent faith in the permanency of human progress.

Brain Centre for Bladder Movements.—DR. BUDGE has traced the excitation of bladder contractions to the crura cerebri. DR. BECHTEREW found that by electrical irritation of the inner side of the anterior and posterior portion of the sigmoid gyrus, contractions of the bladder were excited. The experiments to elucidate this question were performed on dogs and cats.—*Journal of Mental Science.*

PUBLIC HEALTH.

By W. R. CLUNESS, M.A., M.D., Sacramento, Cal.

Mortality.—The deaths registered in 100 town districts of the State during the past month, in a population of 830,250, correspond to an annual rate of 12.96 a thousand, the total mortality having been 897. 112 deaths were due to zymotic diseases, giving an annual rate of 1.61 a thousand. Of these, 33 were due to typhoid fever, 23 to cholera infantum, 16 to diarrhea and dysentery, 15 to diphtheria, 13 to cerebro-spinal fever, 11 to whooping cough, and 1 to scarlet fever. 178 deaths resulted from diseases of the respiratory organs, giving an annual rate of 2.56. Of these, 130 were due to consumption, 38 to pneumonia, 9 to pulmonary congestion, and 9 to bronchitis; the rate being 1.86, and .548 for consumption and pneumonia respectively. The average annual death rate from all causes, occurring in the ten largest cities and towns in the State, and representing a population of 603,000, was 13.15. The highest rate for the month occurring in cities having a population of 10,000 or more inhabitants, was reported from San Francisco, the lowest from San Diego

METEOROLOGY.

By J. W. ROBERTSON, B.A., M. D., Resident Physician and Superintendent Home of Inebriates, San Francisco.

Earthquakes.—This ever interesting and still unexplained and apparently inexplicable phenomenon, again visited California on the last day of July, with what proved to be the severest shock since 1868. While no theory that is fully competent to explain all earthquakes has been offered, a number of ingenious and plausible hypotheses lead to the belief that there are many and widely different causes for these earthwaves and that those of a particular locality may be due to one set of causes, while those occurring elsewhere are due to other and different ones. It is a fact that the great majority of earthquakes on this coast are but slight tremors and rarely attended by destruction of property or loss of life. This immunity from danger is not a characteristic of earthquakes occurring elsewhere, which are often accompanied by an appalling loss of life and property as well as great changes in the topographical configuration of the country adjacent. When it is remembered that any slight jar produced by no matter what agent, but sufficient to cause the ground to shake is termed an earthquake, and that to one which is of sufficient force to be felt, many are unnoticed and only registered by the sensitive seismograph, it is reasonable to suppose that, whatever be the agent at work, it is not a destructive one and bears no relation to the forces which produce the volcano or other eruptive phenomena, nor need we fear the disastrous consequences which follow earthquakes so produced. The warm and sultry weather, the dry hot winds, the peculiar atmospheric conditions which usually precede these outbreaks, and possibly the freedom from electrical storms in the atmosphere which may manifest themselves in some other and more subtle form, may be regarded as strong factors in the production of these slight earth thrills, and it is not a violent hypothesis which would trace some relation between certain of the weather phenomena and seismic disturbance.

Summary for July.—*Temperature:* The reports show that, as usual, July was characterized by intense heat, especially well marked in the valley and mountain belt. Through the San Joaquin Valley hot northers prevailed, blasting vegetation, and accompanied by the usual psychic and meteorological phenomena. The reports from Santa Barbara show that on the 27th a most unusual and disastrous hot wave swept over that place, raising the temperature from 61° F. to 107° F., in a very few hours. The fact that the mean temperature of July at Santa Barbara was only 62° and the maximum heat noted on the next hottest day was 84°, is sufficient proof of the power possessed by these simoon-like winds. Elsewhere along the Coast the temperature was moderate, ranging from 54°, at Eureka, to 58°, at San Francisco. When it is remembered that the mean annual temperature of San Francisco, as well as of the Coast belt, generally is only 55°, and that the mean temperature of the hottest month averages but little more than this, San Francisco's claim for a healthy, bracing and equable temperature needs no further proof or substantiation.

California—Tabular Statement for July, 1889.

STATIONS.	TEMPERATURE.						RAINFALL.		Mean Relative Humidity	WEATHER.			WIND.	FURNISHED BY—
	Mean	Highest	Lowest	Mean Highest	Mean Lowest	Mean Daily Range	No. of Days Rain Fell	Total Rainfall		No. of Clear Days	No. of Fair Days	No. of Cloudy Days	Prevailing Direction.	
Auburn ......Cal.	76.5	105.0	56.0	......	......	......	0	0.00	......	......	......	......	W.	Southern Pacific Co.
Berkeley ...... "	58.5	85.0	51.6	......	......	16.0	0	0.00	83.4	12	18	1	SW.	Obs. Univ. of Cal.
Colfax ...... "	77.3	102.0	60.0	......	......	......	0	0 00	......	......	......	......	SW.	Southern Pacific Co
Eureka ...... "	54.8	66.8	47.7	59.9	51.2	8.7	0	0.15*	90.6	6	3	22	NW.	Signal Service U.S.A.
Fresno ...... "	82.6	112.0	55.0	101.7	63.6	38.1	0	0.00	33.8	31	0	0	NW.	" " "
Keeler ...... "	83.7	107.0	65.0	97.3	72.0	27.1	0	0.00	24.2	31	0	0	S.	" " "
Los Angeles ...... "	70.8	99.0	54.0	83.2	58.5	24.7	0	T	74.4	15	16	0	W.	" " "
Monterey ...... "	64.5	79.0	59.0	......	......	......	......	0.00	......	......	......	......	SE.	Southern Pacific Co.
Napa ...... "	63.0	89.0	50.0	73.7	52.5	21.2	0	0.00	......	11	20	......	S.	Sta. Napa Ins. Asylum
Oakland ...... "	59 8	84.0	53.0	......	......	11.25	3(?)	0.00	89.6	13	14	4	SW.	J. B. Trembley, M.D.
Paso Robles ...... "	73.1	104.0	50.0	......	......	......	......	0.00	......	......	......	......	S.	Southern Pacific Co.
Red Bluff ...... "	81.9	111.1	54.5	97.6	64.9	32.7	0	0.00	33.4	30	1	0	SE.	Signal Service U.S.A.
Sacramento ...... "	72.8	104.0	50.0	89.4	56.8	32.6	0	0.00	62.2	31	0	0	S.	" " "
San Diego ...... "	67.4	84.0	59.0	73.2	62.0	11.2	0	T	80.8	22	7	2	W.	" " "
San Francisco ...... "	58.8	83.0	50.0	65.1	52.5	12.6	0	0.01*	83.9	6	15	10	SW.	" " "
Santa Barbara ...... "	62.2	107.0	53.0	74.0	58.0	16.0	0	0.00	79.0	24	4	3	E.	Hugh D. Vail.
Santa Cruz ...... "	67.1	89.0	52.0	......	......	......	0	0.00	......	......	......	......	S.	Southern Pacific Co.
Yuma ......A. T.	92.0	117.2	67 0	......	......	......	0	T	43.6	26	4	1	S.	Signal Service U.S.A.

* Precipitation from fog. Blank (......) indicates data missing.

Occidental Medical Times.

JAMES H. PARKINSON, L. R. C. S. I., EDITOR.

COMMUNICATIONS are invited from all parts of the world. When necessary to elucidate the text, illustrations will be furnished without cost to the author.

SACRAMENTO: SEPTEMBER, 1889.

BROWN-SÉQUARD'S ELIXIR.

On the first day of June, 1889, Brown-Séquard, in an address delivered before the Société de Biologie, of which he is President, reported certain wonderful results following the subcutaneous injections of a fluid obtained by trituration of the testicles of young animals. The innocuousness of the material thus obtained was verified by injections made with it in animals. He first detailed the results obtained by injections upon himself, which consisted essentially of increased psychical and physical vigor. The elements in the fluid directly concerned in vivifying the lethargic, physical and mental forces are unknown to him, but in a general way he attempts to establish the relationship existing between the secretion of semen and the physical and psychical forces. He appeals, in support of his views to the difference in activity and vigor between geldings and stallions, the effeminacy of eunuchs and the debility in newly-married people, provoked by the excessive expenditure of seminal secretion. To still further show how closely connected these forces are, he proceeds to narrate, at a subsequent meeting of the same Society, the cases of two gentlemen, who suffered from premature loss of their sexual powers. These gentlemen, by the advice of Brown-Séquard, were instructed to practice masturbation, in an incomplete manner, once or twice a week—that is to carry the act up to ejaculation without allowing it to take place. The end justified the means, for the pristine sexual vigor was restored to both. The result attained was attributed to the absorption of the fluid elaborated by the testicles. The rejuvenated physiologist at once saw the necessity which his discovery lacked, namely, the rejuvenescence of the fair sex. Even here resources do not fail him, for in their case the similar application of the ovarian juice is recommended, and he calls for subjects among the females members of the profession to test the practicablity of the scheme.

It is perhaps superfluous to observe that had any other than Brown-Séquard been the author of these questionable methods, his fame would have been short lived. Everything in connection with the theory is antagonistic to the truths of physiology, and it seems but the fanciful creation of an imaginative brain. The testicular juice of the guinea pig was recommended for carrying out these experiments, no doubt on account of the prolific nature of the species. This animal has always served as an excellent subject in the pathological laboratory for the propagation of tuberculosis, owing to its susceptibility to the virus. This fact being known, the danger of inoculating tuberculosis is apparent, and we notice that an Eastern physician has found in the testicular juice of animals many bacilli of tuberculosis. The hereditary transmission of this disease was claimed by certain French experimentors to be due to the presence of the bacilli of tuberculosis in the semen, these authors having found bacilli in apparently normal testes of tuberculous individuals. Hence, the observation of the Eastern physician is entitled to consideration. The testicular juice by no means constitutes the only fluid involved in the reproduction of the species. Its dilution by the accessory glands of the urethra is absolutely necessary before fructification can occur. The spermatozoa in the testicular fluid are endowed with little or no movement, the latter being only attained when free dilution is effected by the secretion from the accessory glands. There is nothing in the chemical nature of the semen that would suggest its application in rejuvenescence. Perhaps the leucomaines present in the fluid would explain many of the results obtained; or, if it is sufficiently old, ptomaines, which in small amounts stimulate, and in larger quantities intoxicate. The immediate effects of an hypodermic injection is stimulation. This observation will be confirmed by every physician who makes frequent use of the instrument. The imagination is probably the most potent factor involved. A careful analysis of the so-called "wonderful effects" of the elixir, shows increased physical and psychical vigor; mere subjective symptoms, the actual existence of which having as yet been imperfectly determined. If, as reports say, these effects are lasting, their permanency can only be secured by a repetition of the injections.

Some experiments have been carried out in one of the San Francisco hospitals, that strongly support the view that the results so far reported are largely due to an effect upon the imagination of the subjects. Several patients were selected and injections were made in each case with water, colored with milk. All the subjects were, through the medium of the daily press, aware of the extraordinary effects produced by the "Elixir," and were very willing to submit to the experiment. The results were really wonderful: A tabetic walked as he had not for years. A case of mitral insufficiency, with disturbances of compensation, felt the new blood coursing through the veins. A paralytic felt "lighter in his legs," the power over his bladder was recovered, and he was no longer constipated. On discontinuing the injections he relapsed into his former lethargic condition, only to be reäwakened when they were again administered. In other cases, similar results were obtained. In a second series, in which the same fluid was used, the subjects being unacquainted with the object of the procedure, stimulation invariably followed the operation, lasting, as a rule, for a brief period, but in some cases for a day. The results obtained by these fictitious injections are, in the main, similar to those made with testicular juice, differing only in the absence of harmful effects. It is difficult not to believe that the *modus operandi* is similar in both cases. At the same time it must be remembered that, except under the most rigid precautions, the subcutaneous injection of an animal fluid may be attended with the gravest results. The elixir is therefore not a fit subject for ignorant or reckless experimentation.

TRANSACTIONS OF THE STATE SOCIETY.

The annual volume of Transactions has been issued about one month later than that of last year. This delay is due to the fact that many of the papers read before the society could not be obtained until several weeks after adjournment. Another source of delay is the custom of furnishing proofs to authors for correction. We have already pointed out the disadvantages of this system, and we repeat that when good manuscript is furnished, the responsibility for its correct appearance should rest solely with the committee. Corrections by authors usually mean alterations in the original text and these entail extra work and extra expense. The volume is smaller than that of 1888 by forty-six pages and its typographical appearance is not quite equal to the previous issue. Each copy has been bound in cloth in a plain but substantial manner, the committee feeling justified in incurring the extra expense. We think that on the whole, this step will be appreciated by a majority of the members as it will ensure the better preservation of the transactions. To those who have a complete set of the transactions the necessary rebinding will not involve additional expense. We can say nothing as to the cost of publication the bills having not yet been submitted. The stenographic report of the proceedings furnished by the OCCIDENTAL MEDICAL TIMES has been utilized throughout this volume. Our attention has been directed to an unwarrantable attempt on the part of the printer to advertise a private enterprise at the expense of the State Society which has undoubtedly escaped the notice of the committee on publication. This proceeding is characterized by a singular absence of good taste, as well as by a lack of judgment.

NOTES.

The Contest in the State Board of Health.

DR. J. R. LAINE, whose appointment as a member of the State Board of Health the Senate refused to confirm, was reäppointed by the Governor immediately upon the adjournment of the Legislature. Dr. Laine then formally demanded possession and on being refused by DR. G. G. TYRRELL, the present incumbent, commenced an action for usurpation of office. The grounds of action are, that in November, 1884, during a recess of the Legislature, Dr. Tyrrell was appointed to fill the vacancy created by the death of Dr. F. W. Hatch and that this appointment terminated upon the adjournment of the next session of the Legislature in March, 1885 (Pol. Code, Sec. 1000), he having meanwhile not been reäppointed. Dr. Tyrrell contends that he holds office until his successor is appointed and qualified, meaning by "qualification" confirmation by the Senate (Pol. Code, Secs. 362 and 879); and that the only instances in which the Governor is authorized to act independently of the Senate during a recess are those enumerated in Section 996 of the Political Code, of which this is not one. Judge Van Fleet, in rendering his decision upon a general demurrer by the defendant, says that the defendant "gives controlling effect to Section 879 and entirely ignores the last clause of Section 1000. In other words defendant recognizes Section 1000 as a warrant for his appointment, but repudiates it as a definition of his tenure. I do not think that this construction can be maintained. * *

These two sections are to be read together. Section 879 is intended to apply generally to all instances where there is a failure from any cause to fill an office in the regular mode immediately upon the expiration of the term of the incumbent, and provides that the incumbent shall continue to perform the duties in order that the public service may not suffer. Section 1000 is intended to apply only to special classes of instances to which it is limited, and it was the evident intent of the Legislature, from the language employed, that there should be no misapprehension as to the time for which the appointee should hold. * * * It is a *non-sequitur* that one who 'can only hold the office until the adjournment of the next session of the Legislature' can still continue to thereafter discharge its duties, since the right to discharge the duties of an office is the right to hold it. * * * I am of opinion that Section 1000 must control in such instances and that under the facts alleged the office became vacant at the expiration of the next session of the Legislature subsequent to the appointment of defendant, and that thereafter the Governor could make a valid appointment to fill the vacancy." The demurrer was accordingly overruled. This disposes of the case in the Superior Court, but we understand that an appeal will be taken. Judge Van Fleet calls attention to the third clause of Section 2 of Article II of the Constitution of the United States, as being almost in the precise language of the Act of 1863, cited in his decision. There is a very general misapprehension that this contest directly involves the position of Secretary of the Board. That official is elected by the Board from amongst its members, and the position is therefore quite outside the present case.

The Druggists' Circular and the Times and Register.

The *Druggists' Circular* of August attacks the *Times and Register* upon two counts—first "Justifying a Fraud," and second forming "A Medical Journal Trust." The former charge is based upon the following paragraph in relation to "Febriline," which appeared in the editorial columns of the Philadelphia journal: "Now, if it be pardonable to mystify a patient a little by a bit of clap-trap—and no physician can succeed who fails to array the mental forces of his patient on his side—is it not equally justifiable for the druggist to do the same to the physician, if the conditions are alike?" Febriline purports to be a tasteless preparation of quinine, and an analysis by Dr. Eccles shows that it does not contain a particle of the alkaloid. The latter charge is as follows:

"It is currently reported that a combination of prominent proprietary and patent medicine houses have been formed to furnish capital to and control what is proposed to be substantially a 'Medical Journal Trust.' It is said that this combination, which is known as the American Medical Press Association, proposes to gradually absorb all the medical journals of this country. The way this is to be accomplished is for the combination of manufacturers to withdraw their advertisements, at the same time, from one journal, and use every other means they can to cripple it, so that it can be bought in at a low rate. This plan is to be continued slowly and cautiously, so as to avoid publicity, until all of the journals are gradually taken in." We fully agree with our contemporary that such a proceeding would be inimical to the best interests of the profession, and should be promptly met by those medical journals which are published by physicians. The *Times and Register* states very emphatically that there is no foundation for this charge. "We desire to say at once that every statement and insinuation therein made concerning the *Times and Register* is utterly and unqualifiedly untrue. Neither manufacturers nor patent medicine houses own or control our company. It is not a trust and has no designs upon its contemporaries" Regarding the apparent defense of the fraudulent preparation, the *Times and Register* says: "By one of those mistakes, which, we are assured, occasionally happen in even the best regulated families, an annotation slipped into one of our late issues, which was worded in such a manner as to give rise to misapprehension. It scarcely seems necessary to say that neither the *Times and Register*, nor any member of its editorial staff, favors or desires in any manner to condone the wrong of substitution. * * * The writer of the annotation headed 'A New View of Substitution,' had no thought of defending the manufacturers of Febriline, whoever they may be (we do not know the parties, and have no advertising or other interest in them), in what was an undoubted wrong—the selling of one thing under the name of another. * * * The writer of the paragraph labored under the hallucination that his item was ironical, and that he was making a very passable poke at himself and his brother physicians, when he suggested that they were themselves doing the very thing they so strongly objected to in the case of the druggists. Like Mark Twain's celebrated joke about the Indian statue, however, this one seems to have been so far-fetched that nobody saw it. * * * We have notified our brother to send diagrams with his jokes in the future." We think the above presents the case fairly, and we submit it to our readers without comment.

The Regulation of Private Asylums in San Mateo County.

DR. W. S. WHITWELL, who has for several years successfully conducted a private hospital in San Francisco, recently found that the growing needs of the institution demanded greater space and accommodation than was readily procurable in that city. After careful deliberation, he decided that San Mateo county presented many advantages, and a convenient site, comprising twenty acres, was accordingly obtained. Most of the land in the vicinity is owned by persons of ample means and used for residence purposes. Property owners have hitherto resented the establishment in their midst of anything that they deemed objectionable, and it is currently reported that a former proprietor of an embryo grave-yard received the liberal sum of $11,000 to move on. The advent, therefore, of a private hospital evidently created something of a panic, and we accordingly find that the Board of Supervisors, equal to the emergency, unanimously passed the following ordinance:

Ordinance No. 68. "An Ordinance to provide for and regulate the keeping of Private Insane and Inebriate Asylums in the County of San Mateo." The Board of Supervisors of the County of San Mateo do ordain as follows: *Section 1.* It shall hereafter be unlawful for any person or persons, corporation or corporations, to erect, construct, or maintain for hire, any private insane or inebriate asylum, or place for the confinement or treatment of insane persons, or of persons affected with nervous diseases, or suffering from the effects of spirituous liquors, within the limits of the county of San Mateo, unless there be erected about the premises on which the same is situated a substantial brick or stone wall at least eight feet in height, having but one opening for ingress and egress, and unless a watchman be stationed at such opening at all times during the day and night. *Section 2.* It shall be unlawful for any person having charge of such asylum, or place, to allow any of the patients confined or undergoing treatment therein to be or go outside of said enclosure unless accompanied by a keeper for each of said patients. *Section 3.* Any person or persons, corporation or corporations, who shall hereafter violate any of the requirements of Sections 1 or 2 of this Ordinance shall be deemed guilty of a misdemeanor, and be punished by a fine not exceeding five hundred dollars, or imprisonment not exceeding six months, or by both such fine and imprisonment. *Section 4.* Any private insane or inebriate asylum, or place for the confinement or treatment of insane persons, or of persons affected with nervous diseases, or suffering from the effects of spirituous liquors, erected, constructed or maintained for hire, within the limits of the county of San Mateo, which is not inclosed and guarded, as required by Section 1 of this Ordinance, is hereby declared to be a public nuisance. This Ordinance shall take effect and be in force fifteen days after its passage. Dated, Redwood City, July 1, 1889.

The good people of San Mateo have been unduly agitated in the premises and are evidently ignorant of the modern treatment of the insane. Their conception of a lunatic is plainly that of the middle ages, or perhaps, the naked maniac of the scriptures "seeking whom he may devour." The eight foot brick wall, the solitary portal, the armed watchman keeping eternal vigil, are all fearfully suggestive of the horrors within. The modern asylum differs from its barbarous predecessors in that the lunatic is committed with a view to treatment and possible recovery. To this end all that savors of restraint or confinement is kept out of sight and the utmost freedom consistent with personal safety is allowed. This, practically, is the system in operation throughout the civilized world. Compliance with the ordinance would convert a picturesque country site into a jail, at once destroying the advantages here sought in the treatment of mental trouble. To enclose a tract of twenty acres with a substantial brick wall eight feet in height, would far exceed the cost of any buildings that were to be placed therein, and the expense is practically prohibitive. We have yet to learn that any private or public asylum in the State is enclosed in such a manner. Dr. Whitwell has occupied two buildings in San Francisco, but in neither was a fence erected that differs from that surrounding an ordinary dwelling, yet residents in *adjoining houses* have found no cause for complaint. A light screen was added to protect the patients from the gaze of a too curious public. In San Mateo the site is about a mile and a half from the station ; the nearest house is distant one-quarter of a mile, and there are only three or four within a radius of half a mile. It is perhaps needless to say that every precaution is taken for the safe keeping of patients and that none are allowed a degree of liberty that may endanger themselves or others. The ordinance was obviously hastily adopted and is both inconsistent and ridiculous ; an absolute prohibition would have been much more rational. We believe that a fair presentation of the case would even now result in its repeal. Failing this, the only course open to the doctor is to proceed with the erection of the buildings and compel the county to bring the matter into the Courts. The police powers of a Board of Supervisors are very large, but are founded solely on the principle of the health or safety of the public being endangered. In this case it will be impossible to prove that either can suffer. The ordinance is certainly an unwarrantable interference with the rights of the individual, and on either ground we believe it will not be sustained in Court.

SOCIETY PROCEEDINGS.

SACRAMENTO SOCIETY FOR MEDICAL IMPROVEMENT.

Regular Meeting, July 16, 1889.

The President, A. E. BRUNE, M. D., in the Chair.

New Member.—C. E. FOWLER, M. D., was duly elected a member of the Society.

Gunshot Wound of the Abdomen.—DR. C. B. NICHOLS reported a case of gunshot wound of the abdomen, involving the ascending colon.

DR. T. W. HUNTINGTON said that this case was confirmatory of the opinions that he had always advanced. The only chance of life the patient had was by laparotomy. The surgeon should always pursue a definite course of treatment, disregarding any other circumstance.

DR. G. L. SIMMONS wished to asked Dr. C. B. Nichols if, when called to testify, he could say that the wounds were necessarily fatal? By the patient's refusing operation, did he not assume the risk of a fatal issue?

DR. C. B. NICHOLS said that he regarded the patient, in refusing an operation, as wholly responsible for the results that led to his death.

DR. W. A. BRIGGS took issue with this statement. A wound of this nature is not necessarily fatal with or without surgical interference, and refusal of operative treatment by the patient did not lessen the guilt of his murderer.

DR. J. R. LAINE said that he understood where there was the criminal intent to kill, if the wound does not prove immediately fatal, but by injuring the tissues induces some complication, from the result of which the subject may die, the criminal can be held for murder in the first degree. The intent to kill is all that is necessary to be proven.

DR. W. E. BRIGGS read a paper, entitled "Notes on the Electro Magnet in Ophthalmology, with a Report of Nine Cases." (*Vide* MEDICAL TIMES, vol. iii, No. 8.)

DR. G. L. SIMMONS, JR., read a paper upon "New Drugs and New Methods in the Treatment of Disease." (Published at page 484.)

DR. W. A. BRIGGS said that he had used sulphonal with good results. The doses ordinarily given were, he thought, too large. In a case of chorea in a woman, he found that 15 grs. gave about 15 hours' sleep. Later he had reduced the dose to 10 grs., which was sufficient. It had also acted well in a case of ascites, though sleep was not produced for 12 hours. In the treatment of syphilis, he had always used mercury, with good effect. He used it locally in some types of the disease, particularly where the cutaneous surface was affected. Applied in this way, he had found it most effective.

DR. J. H. PARKINSON agreed with the last speaker regarding the dose of sulphonal. He believed that strophanthus was much superior to digitalis in many cases. It was not cumulative, did not disagree with the stomach, and acted well even in very small doses. As a diuretic, it was inferior to digitalis. The uncertain results reported by several observers, were due to an inferior preparation, and it was very important to obtain a reliable article.

DR. T. W. HUNTINGTON had used strophanthus in a number of cases. He had at first been pleased with the results, but had not found that its effects were lasting, and thought that we would still rely on digitalis. Sulphonal, which he had used largely, was a valuable drug. In male patients, of active habits, it must be employed in large doses. He hoped that in creolin we had an agent which could be substituted for the bichloride. The constant use of solutions of the latter entails most disagreeable effects upon the hands of the operator.

DR. J. R. LAINE had used strophanthus in 10-drop doses of the tincture. In some cases it had acted better than digitalis. In one case of dropsy, it had, however, been ineffective.

DR. F. B. SUTLIFF had had considerable experience with kava kava in the Hawaiian Island, but did not think that it was very efficacious in gonorrhea.

THE PRESIDENT said that he hesitated to express his belief in new remedies until they had been thoroughly tested. In the treatment of syphilis, he did not see that any advance had been made; the methods were similar to those in use when he had been in Vienna ten years ago.

SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Regular Meeting May 28, 1889.

The President, GEO. CHISMORE, M. D., in the Chair.

New Member.—M. J. FOTTRELL, M. D., was duly elected a member of the Society.

The Suspension Treatment of Tabes Dorsalis.—DR. J. H. STALLARD, with the consent of his colleague, Dr. Hamilton Bowie, exhibited a patient suffering from tabes dorsalis, who had been treated at the San Francisco Polyclinic by the suspension method during the previous five weeks. The patient contracted syphilis ten years ago, and in February, 1885, he began to lose the use of his lower limbs, for which he was treated by means of mercurial inunctions, iodides, steam baths and other remedies. This resulted in some improvement, but it was only temporary in character, and the paralysis gradually increased, until he was almost unable to stand. When he was brought to the Polyclinic he could stand with difficulty; walking was an impossibility, and the reflexes were completely lost. During the last five weeks he had been suspended three times weekly, for from one to six minutes, and now the patient can walk a short distance, and there is a return of sexual reflexes. Dr. Stallard mentioned another case, in which an improvement not only in the ataxic, but also in the eye symptoms, had followed treatment by the suspension method.

DR. NORRIS did not believe that the disease was due to a syphilitic origin so frequently as some authorities maintained. He was glad to see so marked an evidence of the value of the suspension treatment, as he had been inclined to regard it as a "medical fad."

DR. G. F. SHIELS agreed with Dr. Norris, and thought that the number of cases of tabes due to syphilis was much less than is usually supposed. He really thought that it could not be regarded as a sequela of syphilis, similar to many other diseases, as it never yielded to antisyphilitic treatment.

Thrombosis of the Pulmonary Artery.—DR. D. W. MONTGOMERY exhibited an interesting specimen of thrombosis of the pulmonary artery. The following history was furnished by Dr. Stallard, who had been the physician in attendance upon the case. The patient was aged 55 years, and had enjoyed good health until three weeks prior to his death, when he was attacked with dyspnea and pain in the chest, the face was congested and the patient suffered from thirst and insomnia. For two days a slight bruit was heard over the right auricle. The diagnosis was thrombosis of the pulmonary artery. A few days before his death he was seized by a severe pain in the back of the leg, which gradually disappeared. The autopsy showed that the pulmonary artery was tightly plugged by a thrombos, but the blood supply to the left lung was not so thoroughly occluded as that to the right. The heart was somewhat enlarged and *both auricles* filled with blood, which is contrary to the general rule in this disease. The muscles of the heart on section showed brownnian degeneration of their fibres; and here again an exception to the general rule was found in the fact that this degeneration was accompanied by an accumulation of fat around the organ. The embolus in the pulmonary artery was hard, decolorized and cut like tendon or cartilage, showing that it had existed for some time.

DR. NORRIS asked whether there appeared to be any particular cause that would explain the formation of the thrombus.

DR. MONTGOMERY said that he attributed its formation to the lymphomatosis and brownnian degeneration leading to weakening of the circulation, so that a clot formed in the right ventricle and became impacted in the pulmonary artery.

CORRESPONDENCE.

The Contagion of Leprosy.

Dear Sir—Mr. Jonathan Hutchinson, in the *British Medical Journal* of June 29 and July 6, 1889, gives his views concerning acquired leprosy, as observed in England. He prefaces his remarks by stating that there is no such difference of opinion in the ranks of the profession regarding the contagious nature of the disease as many suppose. He says that no one denies the possibility of contagion in what may be called the abstract or non-practical sense, while all, or very nearly all, doubt whether contagion takes any important share in the spread of the disease. In speaking of Father Damien's death, he says: "It has impressed the public with the belief that the disease is contagious, whereas it proves no such thing. The risks to which he exposed himself, were far other than those of contagion—they were those of food as well." A little further on, the author states that when he visited the leper establishment of Norway, he made diligent inquiries concerning its contagion, and especially whether strangers visiting Norway ever acquired leprosy. Everywhere he was told they did not, save in one well marked instance—that of a German officer, who contracted the disease. They all agreed that he deserved to get it, as he degraded himself by living with the fishermen as they lived. He concludes, from what he has observed of the disease in England, that the spores of the bacillus are taken in the food furnished in the infected districts. That the food containing the spores is probably fresh fish, and that the leprosy process may come to an end during residence in England.

In reading the article, which I did with a deal of pleasure, I was forced to conclude that something further might be said on nearly all these points. Next to the treatment of the disease, the most important question is its contagion, or the manner in which it is often transmitted from the affected to others who associate with them. I am sorry to say there *is* a great difference of opinion in the ranks of the profession regarding this point, some denying that it exists in any form. Wilson distinctly states "the disease is hereditary, but not contagious." This is very plain and very positive. To quote other authors, who declare it to be contagious in just as positive terms, would only take up time and space. As Mr. Hutchinson believes in a "non-practical," or "abstract contagion," he and Wilson certainly cannot be said to agree. Neither does he agree with Fox, when that author says the tendency of the best opinions is now toward the view that leprosy is contagious under certain conditions, such as the inoculation of special discharges.* Regarding Father Damien's case, let us see where a few questions concerning it will lead us. Leprosy has existed in Hawaii for only a few years. Dr. Hillebrand states that it was introduced into Honolulu by the Chinese in the year 1848, and that five years later he saw the first Hawaiian leper. Whether the first part of the statement be correct or not, is a point which I believe is not settled. But, as the doctor was a keen observer, we can conclude that leprosy was not a common disease in Hawaii at that date, or five years would not have passed before he saw his first native leper. Now, had Father Damien lived and died in Hawaii before this date, he would have had very much the same food as at present, only not so great a variety, and in quality not so good. He would have eaten more fish, fewer green vegetables, fresh meat, butter, milk, and eggs not so often, and a smaller variety of fruits. For in all these the native is better supplied since the white man and the steamships have brought to him the products of the world. Need I say that Father Damien, dying at that date with an inferior food supply, but not coming in contact with lepers, would probably have died a non-leper? or shall we conclude that the finny creatures of the sea are now contaminated by a germ that they did not then possess; or, that the processes of fermentation in "poi," or putrefaction in drying fish are different now than then? I think we must rather conclude that if Father Damien took the germs of the disease into his system with his food, it is because it was transmitted to that food by leprous hands, or conveyed to it in some way by a leper.

The German officer who lived in Norway with the lepers, and who "degraded himself by living as they did" was in close and continuous contact with them. He probably lived in their huts, inhaled their exhalations, slept in their beds, and ate of the food they prepared. He lived as closely with them in Norway as Father Damien did in Hawaii—both contracted the disease and in all this their cases are parallel. I suppose the object they had in living with the lepers differs as widely as the opinion of the profession regarding the contagion of the disease.

Mr. Hutchinson was informed that strangers visiting Norway do not contract the disease. How many may have done so cannot be known unless they were kept under observation for a number of years. We have seen that Dr. Hillebrand did not notice the first Hawaiian leper until five years after he saw the disease amongst the Chinese, and we also have some light on this point from the very interesting case of Keanu—the inoculated Hawaiian convict. He was inoculated in 1884, and in fourteen months after, though the bacillus could be found in the scar, he showed no other signs of leprosy; nor was it till the latter part of 1887 that I heard he was showing any marked signs of it; and we know that the period of incubation is often much longer. But let us suppose that they have been under observation all the time since their visit and that they are not affected. Is it because they abstained from eating fish while in Norway? Did they live closely with the lepers while abstaining from their food? I will have to answer this by stating what I know to be the case in Hawaii. There are foreigners living in contact with the natives there as Father Damien and the German officer did—the association is closer than that of nurse or surgeon and from what the people generally observe of such close living, they fear it. There is another class who only come in contact with the natives in a business way. As far as they can they are careful to avoid personal contact. Of this class a great many eat fish when they can get it, and many of them eat "poi," when they know where it is made; but they will not buy their fish where a leper is known to be employed, and will not be served by a leper in any way. Of the former class, many have contracted leprosy and statistics show that others will. (See Dr. Mouritz's report regarding friends of lepers at Molokai). Of the latter class very few have become lepers.

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* Epitome of Skin Diseases, edition 1883, page 111.

In this connection I would like to ask what of the cases we have seen here in California? Here there is no epidemic influence, nor can I believe there to be a contaminated food supply. Did these cases eat too freely of fish of some particular kind or condition? One case that I have seen lives near the river where it might be supposed that fish could be easily obtained, but in reality if he chose to eat fish often he would have to go to the town markets to procure it. The history of the case shows that he associated with a party of Hawaiians when a lad, and one of them we know to be a leper. Another lives away from the river and has probably eaten sparingly of fish; he developed leprosy shortly after vaccination. The Hawaiian brought the disease with him from Hawaii and a fourth, a Chinaman, may be supposed to have been in constant contact with his afflicted countrymen. When the history of two other cases are ascertained, I feel confident that the fact of contact will be easily established.

Regarding the point that lepers residing in England may slowly get rid of the disease, I have nothing to say. When in Honolulu, my attention was called to the case of a native who had been treated for leprosy years before, and who, so far as could be seen, was no longer a leper. Physicians there, well acquainted with the facts, do not doubt the diagnosis, and I was assured by one who was well acquainted with him that he seemed to be entirely well. I was told that the treatment was arsenic, given in large doses. I have seen the leper greatly benefited by treatment, and at times the disease seems to have made no progress for years where there has been no treatment at all. I would have but little faith in a cure, however, even after the disease had not manifested any activity for a long period; it is safer and more in keeping with the facts as observed where leprosy is prevalent, to consider such a case potent for ill in some slight degree till it ends in death. I cannot conceive of such a thing as a non-practical contagion of so dread a disease. From what I have observed I would say of its contagion as Mercutio did of his wound, "It is not so deep as a well, nor so wide as a church door, but 'tis enough; it will serve."

Yours truly, F. B. SUTLIFF, M. D.

Sacramento, Cal.

Sir Morell Mackenzie's Statistics.

Dear Sir: In the June number of the OCCIDENTAL MEDICAL TIMES there is a note regarding Sir Morell Mackenzie's statistics, which, indirectly, charges your German correspondent with having unduly levelled unfounded accusations against that author. I would be very happy to let the matter rest; but, in my own defense, I think it necessary to affirm that the explanation given in the note does not suffice to explain all the incongruities in the statistics in question. The articles published in the *Deutsche Medicinische Wochenschrift*, will amply bear me out in my assertion. I maintain that the statistics were compiled in a disorderly and erroneous manner, utterly unworthy of a medical gentleman of such eminence as Sir Morell. Yours truly,

GERMAN CORRESPONDENT.

BOOKS AND PAMPHLETS RECEIVED.

The Urine, the Common Poisons, and the Milk. By J. W. Holland, M. D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College of Philadelphia. Third edition; revised and much enlarged. Philadelphia: P. Blakiston, Son & Co.

The Treatment of Syphilis at the Present Time; by Dr. Maximillian von Zeissl. The Treatment of Inebriety in the Higher and Educated Classes; by James Steuart B. A. Manual of Hypodermic Medication; by Drs. Bourneville and Bricon. Wood's Medical and Surgical Monographs; Vol. 3, No. 2. New York: Wm. Wood & Co. Price, $1.00.

The Washington Life Insurance Co. Historical, Acturrial and Medical Statistics. New York: Published by the Company.

Expression in the Treatment of Trachoma. By A. E. Prince, M. D.

Pelvic and Abdominal Drainage. By David Prince, M. D.

Suspension in the Treatment of Affections of the Spinal Cord. By Alexander B. Shaw, M. D.

Histero-Gastrorrafia Vaginal; by Dr. M. Candela.

Report of a Case of Hystero Epilepsy in a Man; by Lewis H. Adler, Jr., M. D. [Reprinted from the *Medical News.*]

Report of Amputations Performed at the Hospital of the University of Pennsylvania from September 30, 1874, to December 31. 1888. By Lewis H. Adler, Jr., M. D. [Reprinted from the *Medical and Surgicat Reporter.*]

Report of a Case of Stricture of the Rectum, the Probable Result of a Specific Vaginitis. By Lewis H. Adler, Jr., M. D. [Reprinted from the *Medical and Surgical Reporter.*]

A Case of Hodgkin's Disease, Accompanied with a Possible Resulting Paraplegia. By Lewis H. Adler, Jr., M. D. [Reprinted from the *Medical News.*]

On Disordered Digestion and Dyspepsia. By Frank Woodbury, M. A., M. D.; Fellow of the College of Physicians of Philadelphia; Honorary Professor of Clinical Medicine in the Medico-Chirurgical College of Philadelphia, etc. Physicians' Leisure Library. Detroit: Geo. S. Davis. Cloth, 50 cents; paper, 25 cents.

MEDICAL NEWS.

LICENTIATES OF THE BOARD OF EXAMINERS.

At the regular meeting of the Board of Examiners, held Aug. 7, 1889, the following physicians were granted certificates to practise medicine and surgery in this State:

John A. Blake, Fullerton; Med. Dept. Univ. of Michigan, June 27,'89.
Edward R. Bradley, Los Angeles; Coll. of Med. Univ. of Southern California, April 11, 1888; Bellevue Hosp. Med. Coll. N. Y., March 11,'89.
Geo. W. Campbell, Los Angeles; Coll. of Med. Univ. of Southern Cal., April 12,'89.
Thomas J. Cronise, Riverside; Med. Coll. of Ohio, March 1,'53.
Robt. M. Elliott, San Francisco; Royal Coll. of Phys., Edinburgh, Scotland, Aug. 10,'82.
Lashley M. Gray, Woodland; St. Louis Med. Coll., Mo., March 8,'82.
A. K. Happersberger, San Francisco; Med. Dept. Univ. of California, Nov. 16,'88.
Frank H. Harrison, San Francisco; Coll. of Phys. and Surgs., N. Y., May 16,'82.
Leoni Hürlimann, San Francisco; Coll. of Med. of Syracuse Univ. N.Y., June 14,'88.
John Mangan, San Francisco; Med. Dept. Univ. of Pennsylvania, March 14,'67.
T. L. Shaffner, Los Angeles; Coll. of Med. Univ. of Southern Cal., June 27,'89.
Charles Stirling, Petaluma; Coll. of Phys. and Surgs. of Chicago, Ill., Feb. 28,'88.
Marion F. Stirling, Petaluma; Woman's Hosp. Med. Coll. of Chicago, Ill., April 21,'85.
John Wilmshurst, San Francisco; Royal Coll. of Surgs., England, Jan. 5, 1849; King and Queen's Coll. of Physicians, Ireland, March 11,'63.
Edward A. Younger, San Francisco; Med. Dept. Univ. of Cal., Nov. 7,'79.

CHAS. E. BLAKE, Secretary.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the U. S. Army (Division of the Pacific), from July 16th, 1889, to August 17th, 1889.

Captain Walter W. R. Fisher, Assistant Surgeon, will proceed to Benicia Barracks, Cal., and report to the Commanding Officer for temporary duty at that post. Par. 2, S. O. 62, Dept. of Cal., July 26, 1889.

First Lieutenant Leonard Wood, Assistant Surgeon, will proceed, on public business, from Monterey, Cal., to Santa Cruz, Cal.; and on completion thereof will return to Monterey. Par. 2, S. O. 71, Dept. of Cal., Aug. 17, 1889.

ITEMS.

Dr. G. W. Davis has returned from Europe and resumed his practice, at 326 Geary street, San Francisco.

Change of Address.—DR. T. A. SNIDER, of Sacramento, has removed his office from Second and K streets, to Seventh and K, under Capital Hotel.

Dr. R. H. Plummer, who is at present in Europe, on July the 9th, 1889, passed the final examination and was admitted as a member of the Royal College of Surgeons of England. We understand that Mr. Christopher Heath, in congratulating Dr. Plummer, took occasion to compliment him upon his examination.